

SOCIAL CONNECTEDNESS AND STUDENT DEBT: PREDICTING COLLEGE  
RETENTION AT A FOUR-YEAR PRIVATE LIBERAL ARTS INSTITUTION

by

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## **ABSTRACT**

Of all the students entering a four-year institution of higher education, only 52.8% graduate within five years (Noble & Sawyer, 2013). Over the years, American higher education has made little progress toward improving the graduation rate and ensuring students entering college will be successful. University leaders and policymakers have increased their academic success efforts to improve retention and graduation rates (Bettinger & Baker, 2014). Using the theory of social connectedness, the purpose of this quantitative study was to determine the extent to which quality relationships with peers, faculty, and staff predict student retention and graduation at a small, private institution located in the central United States. Hierarchical regression analyses indicated financial debt as a statistically significant predictor of student retention. In regards to graduation, no variables were found to be statistically significant. Seniors were significantly more likely than freshmen to have quality relationships with peers. Females were significantly more likely than males to develop quality relationships with staff. In this study, with financial debt being the greatest predictor of retention, institutions could provide debt counselors to help students navigate through any financial challenges they may encounter. Another option would be to charge tuition as a complete package rather than paying per semester. Paying upfront could increase the commitment level on behalf of the student and allow institutions to capture money that is normally lost when a student leaves, allowing institutions to lower overall tuition. Further details and additional recommendations for policy and practice are provided for students and institutions.



## CHAPTER 1

### INTRODUCTION

As Americans experience the effects of a recent recession, young adults do not have the same employment opportunities their parents had at a comparative age, making a college degree increasingly relevant to young adults seeking a better life (Sum, Mangum, & Taggart, 2002). For many who graduate high school, immediately attending college and earning a degree has become an expectation, no longer considered an opportunity for the select few. The United States Bureau of Labor Statistics in 2012 reported 66.2% of high school graduates were enrolled in colleges or universities. In pursuit of a degree, many college students confront challenging schedules which take away precious time put towards academics. As many as 80% of students work at least part-time while enrolled in college (Perna, 2010), forcing students to make good use of their time. The ability to recognize opportunities to improve one's academic performance, and possibly one's long-term success, may not be apparent in the midst of an overloaded schedule, leaving the institution responsible to provide opportunities and necessary guidance.

The college experience has become more than just the learning that occurs inside the classroom. In fact, "One of the most inescapable and unequivocal conclusions we can make is that the impact of college is largely determined by the individual's quality of effort and level of involvement in both academic and non-academic activities" (Pascarella & Terezini, 2005, p. 610). The concept that students more likely benefit from college if actively involved in student engagement activities (Kuh, Kinzie, Schuh, & Whitt, 2005) has become a focus for many institutions, evident by substantial monies supporting intentional programming and added training sessions for faculty and staff. The term *student engagement*, commonly used in the college setting, refers to purposeful activities that positively impact desired outcomes such as student development and academic success (Kuh 2001, 2003, 2009). The importance of student

engagement has been a focus in relevant literature for more than 70 years, with an evolved and refined meaning to effectively address the current student population (Kuh, 2009). Student engagement first included behaviors such as class preparation and interactions with instructors; more recent definitions have added collaboration with peers, problem-solving tasks, participation in campus activities, community service, and other institutional opportunities that encourage students to engage in such practices (Kuh, 2001). Efforts to increase student engagement continue to drive many conversations taking place in the higher educational setting.

Although no substitute for rigorous academic curriculum exists, research has indicated a direct link between student engagement as part of the college experience and academic success (Pike, Schroeder, & Berry 1997; Pike, Smart, & Ethington, 2011). This link has caused institutions to identify direct and indirect engagement activities contributing to student learning. Universities now recognize the integral role that enhancing the student experience plays in creating an institution's identity (Small, 2008). Furthermore, multiple researchers have concluded that students actively involved in engagement activities gain more from their college experience than do those not as involved (Astin, 1993; Kuh, 2003; Pascarella & Terenzini, 1991). These findings bring added value to activities and programs falling under the student engagement umbrella.

Institutions desire to create a campus environment that offers the resources and opportunities for students to participate in student engagement activities. With an increasing number of students attending college and institutions dealing with tight budgets, educational leaders have been forced to become more strategic with their efforts to enhance student engagement (Zusman, 2005). Because student engagement influences student success, assessing current programs and designing new programs that directly contribute to academic success

brings value to an institution. Prior to determining the most appropriate programs specific to an institution, identifying common factors within the programs impacting academic success should take place. Narrowing in on key aspects of student engagement that have greater academic impact will allow institutions to channel their efforts on specific programming areas.

The concept that students learn from their experiences in college remains consistent through the works of Astin (1984, 1985), Pace (1984), and Kuh (2001, 2009); but previous researchers have been unsuccessful in identifying specific components of student engagement that are greater predictors of student success. Every student engagement activity designed by institutions attempts to create some form of relationship building to lead to student success. According to Sanborn (2004), as one lives life, relationships should become a person's top priority, primary objective, and greatest ambition. The quality relationships developed by a person greatly influence the decisions he or she will make as well as the path taken (Simpson, Griskevicius, & Rothman, 2012). Quality relationships are positive, working and social, relations in which one is committed to the success of the other (NSSE, 2012).

Commitment to the success of others may have a greater impact on student success than once realized. Weidman (1989) stated that long-term academic impacts of college do not result from classroom experiences, rather result from informal social interactions that occur with peers and faculty. A more recent study from Schreiner, Noel, Anderson, and Cantwell (2011) supports the importance of creating a setting for relationships to form because relationships significantly impact a student's ability to succeed and persist. The findings from this study are well positioned to help institutions reach a deeper understanding of how quality relationships developed by students influence their academic success. Identifying the group having the greatest influence on academic success could lead to targeted efforts by institutional practitioners to create purposeful

activities and programs that foster specific relationships with individuals from the leading group. For those who desire personal academic success, the findings will also allow students to be intentional in their relationship building efforts.

Educational leaders and researchers have struggled to accurately measure student engagement components on a campus. One way institutions gauge the quality of student engagement is to participate in the National Survey of Student Engagement (NSSE) (NSSE, 2001). The NSSE instrument assesses the extent to which undergraduates are engaged in educational practices linked to high levels of learning and development (LaNasa, Cabrera, & Transgrud, 2009). The tool, created in 1998 as a method to collect data on the quality of an institution and piloted in 1999 in conjunction with the National Center for Higher Education Management Systems, ran through two field tests in which 12 institutions and 68 institutions participated respectively. The NSSE was first introduced in 2000 with 276 fee-paying colleges and universities (Kuh, 2009). Three core principles, according to Kuh (2009), bring value to the NSSE project. The first, and most important, is to provide high quality, actionable data that institutions can use to improve the undergraduate experience. The second is to document and discover effective educational practice in higher education. The final principle is to promote public acceptance and use of empirically derived conceptions of collegiate quality.

Statistical analyses of the NSSE data might offer guidance in the value an individual and an institution should place on student engagement based on academic performance. Identifying possible predictors could lead to the development of targeted strategies for institutional personnel. This study provides information on quality relationships developed by students during their college experience that could potentially predict academic performance.

Student affairs professionals lead in higher education by providing activities and programs that positively impact student development and academic performance (Pascarella & Terenzini, 2005). In any particular activity, relationships might exist that in some way contribute to academic performance and student development. In recent years, student affairs practitioners have accepted the responsibility to assess their respective universities' programs and provide evidence of the contributions made to student learning. In large part, these assessment efforts have increased because the National Commission on the Future of Higher Education has asked college and universities to disclose more and more about student development (Kuh, 2009).

### **Statement of the Problem**

In 2013, Noble and Sawyer reported only 52.8% of students who entered a four-year institution graduated within five years. Over the years, American higher education has made little progress toward improving the graduation rate and ensuring students entering college will be successful. University leaders and policymakers have increased their academic success efforts to improve retention and graduation rates (Bettinger & Baker, 2014). In the 2009 State of the Union address, President Obama stated:

This country needs and values the talents of every American. That is why we will provide the support necessary for you to complete college and meet a new goal; by 2020, America will once again have the highest proportion of college graduates in the world. (Obama, 2009)

High expectations from President Obama will likely bring awareness to the issue and discussion on future change.

Similar expectations come from a different direction. The recent emphasis placed on the No Child Left Behind Act (Public Law 107-110, 2001) at the secondary level has created similar

expectations within higher education for everyone to graduate. Although finances has been reported as the primary reason students do not retain (Bowen, Chingos, & McPherson, 2009), the focus must direct toward factors controlled by the institution. The lack of resources when demands and costs are high have caused continuous examination from institutional leaders on current practices and exploration of other possibilities that could improve student success. Institutions have a responsibility to create a campus filled environment where opportunities that lead to greater academic success for more students entering college exist, but also recognize every student may face challenges with personal factors that impede his or her ability to retain and graduate.

Hayward (1998) notes that one typically encounters some sort of adversity on the road to success. Successful people have individuals who have influenced and supported them throughout their journey, giving that extra push and guidance when faced with adversity (Robin, 2008). The process of adjusting to college involves several factors, with one key variable as the presence of key figures who walk along incoming students and help them transition to the college environment (Lamport, 1993). Developing relationships is an integral part of the college experience and forming quality relationships directly impacts academic success. Three groups of individuals—peers, faculty, and staff—have been identified in the literature as possible relationships an institution could facilitate in order to achieve academic success.

For many years, relationships with others have served a greater purpose in college than simply refining one's relational skills. Pascarella and Terenzini (1991) suggest supportive individuals are essential to student success. Lavin (1965) and Spady (1970), found close relationships with peers positively linked to academic success, but more specifically Epstein (1983) found students having high-achieving friends had higher grades than similar students with

low-achieving friends. Institutions providing peer-mentoring programs exhibited a positive effect on the mentees' academic performance. Although programming may vary, evidence reveals the value peer relationships can bring to academic success.

Relationships developed with faculty and staff have demonstrated positive outcomes as well. Every student in a study conducted by Pak, Bensimon, Malcom, Marques, and Park (2006) described the value placed on the relationship of a faculty or staff member who had given him or her the confidence to succeed academically. For over 40 years researchers have been looking at the impact student-faculty relationships have on academic performance (Astin & Panos, 1969; Pascarella, 1980). Astin (1993) reported student-faculty interaction significantly correlates with every academic outcome, including retention and graduation rates. Further studies confirm high quality student-faculty relationships directly link to higher grade point average (Anaya & Cole, 2001; Ullah & Wilson, 2007). While developing such relationships has proven effective, challenges exist, such as the workloads and schedules of faculty (Kuh, Schuh, & Witt, 1991), that prevent these relationships from occurring more often.

The emphasis placed on student engagement activities and programs has caused the researcher to further examine and determine the influences relationships formed with students—peers, faculty, and staff—have on retention. As institutions aim to improve the academic success of their students by promoting quality relationships, identifying the group with the greatest predictor of retention and graduation could help guide programming efforts in becoming more purposeful and effective. A dearth of literature comparing the impact quality relationships with peers, faculty, and staff have on student retention and graduation exists, bringing value to this study.

### **Purpose**

This quantitative study aims to determine the extent to which quality relationships with peers, faculty, and staff predict student retention and graduation at a small, private institution located in the central United States. The researcher focused solely on whether quality relationships play a role in retention and graduation; the method of forming relationships was not explored in this study.

### **Research Questions**

Based on the purpose of this study, the researcher addressed the following research questions:

1. What are the demographic characteristics of students who participated in the 2012 NSSE at a small private institution located in the central United States?
2. To what extent is there a difference between freshmen and senior, male and female, and white and non-white students' views of relationships with a) peers, b) faculty, and c) staff?
3. To what extent do the demographic variables (race and gender), financial variable (financial debt), and relationship variables (relationships with peers, relationships with faculty, and relationships with staff) predict freshmen retention?
4. To what extent do the demographic variables (race and gender), financial variable (financial debt), and relationship variables (relationships with peers, relationships with faculty, and relationships with staff) predict graduation with a degree for senior undergraduate students?



### **Significance of the Study**

The significance of this study pertains to identifying relationships that will improve academic success for college students. Levine and Nidiffer (1996) reported “it was human contact that made the difference” (p. 65) in the success of the college students who participated in their study. Knowing the impact that relationships have on academic success, this study seeks to identify which relationships formed with specific groups outside the classroom are greater predictors of student retention and graduation. The findings contribute to the body of knowledge needed to influence decisions that will lead to academic success for more college students. To the extent that one can understand the level of impact students’ relationships have on academic success, better positions one to explore the dynamics of how those relationships best form. Results from this study could bring greater understanding to quality relationships and lead to practical implications for institutions in guiding decisions that will improve retention and graduation.

### **Conceptual Framework**

A conceptual framework provides guidance for the researcher in organizing and articulating the phenomena that the study seeks to understand. Creswell (2009) describes theory as “a set of interrelated constructs (variables), definitions, and propositions that presents a systematic view of phenomena by specifying relation among variables, with the purpose of explaining natural phenomena” (p. 51). The foundation of development comes from the work of Robert Kegan’s (1994) theory on the mental complexity of adulthood, suggesting that the complexity of adult life in modern America calls for increasingly complex forms of education and processes for organizing experiences. Schreiner et al., (2011) suggest relationships can make

a significant difference in students' ability to succeed. With this understanding, the conceptual framework for this study develops.

Since student engagement is a broad term that includes activities such as personal reading and spiritual meditation, the researcher chose to narrow the focus and address only theories contributing to social connectedness and activities more likely to produce quality relationships. Research concerning the need for relationships begins with Bowlby (1969), indicating that children enter the world biologically pre-programmed to form attachments with others, because such attachments will help them survive. Bowlby defined attachment as a "lasting psychological connectedness between human beings" (p. 194). This attachment is a deep emotional bond that connects one person to another across time and space. Bowlby did not formulate his theory as a general theory of relationships, rather to describe how human beings respond within relationships when hurt, separated from a loved one, or perceiving a threat. Astin (1984) connects Bowlby's attachment theory to college students by stating students use positive relationships with adults to organize their experiences. These relationships create a secure base from which to explore the college environment, consisting of events that occur in and outside the classroom.

Tinto's (1975) interactionalist theory recognizes the interactions occur between the student and the academic and social systems of college. While Tinto describes the value of academic integration, which consists of structural and normative dimensions, the social integration becomes equally relevant. Social integration occurs both at the level of the college and at the level of the subculture of an institution. Social integration reflects the student's perception of his or her degree of congruence with the attitudes, values, beliefs, and norms of the social communities of a college.

Indeed, Tinto (1975) postulates that academic and social integration influences a student's commitment to the institution and to the will to succeed. The greater the student's level of social integration, the greater the level of subsequent commitment to the college. In turn, the greater levels of institutional commitment to student success, the greater likelihood the individual will persist in college. According to Braxton, Sullivan, and Johnson (1977), Tinto's proposition on social integration has received strong empirical backing. Of the thirteen propositions Tinto developed, the center of this study focuses only on the social integration and the level of commitment to the institution components, indirectly connecting to academic success. Once determined, institutions can work to create a culture in which relationships can develop authentically through intentional programming.

Vygotsky uses social constructivism to highlight the social interaction elements and the social context of learning (Vygotsky, 1978). Vygotsky's theory of zone of proximal development suggests a student can enhance his or her cognitive level by learning with a more capable peer or adult mentor. According to Vygotsky,

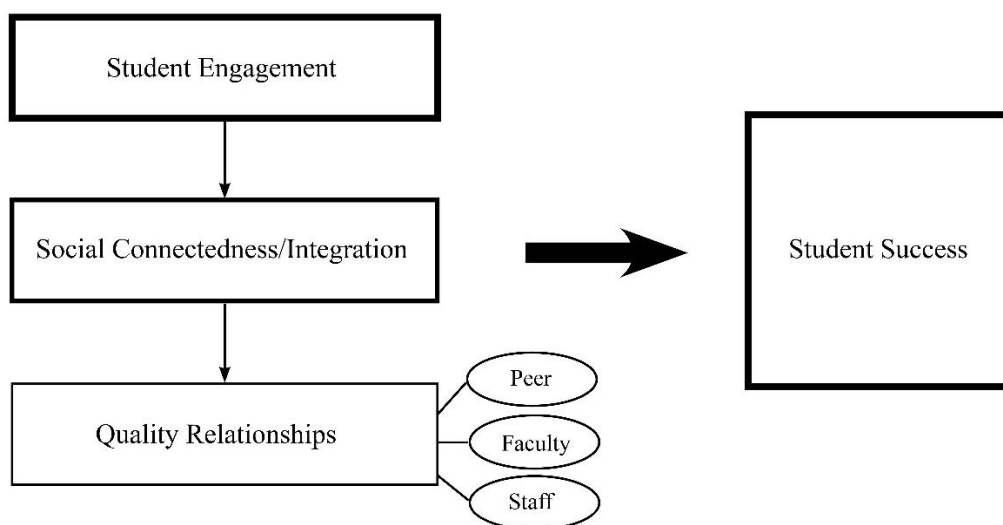
. . . an essential feature of learning is that it creates the zone of proximal development; that is learning awakens a variety of internal developmental processes that are able to operate only when the [student] is interacting with people in his environment and in cooperation with his peers. Once these processes are internalized, they become part of the [student's] independent developmental achievement . . . developmental processes do not coincide with learning processes. Rather, the developmental process lags behind the learning process; this sequence then results in zones of proximal development. (p. 90)

Thus, the social context provided by discussing an issue with an individual who has achieved a higher level of cognitive development influences the student's own cognitive development by establishing expert scaffolding (Falchikov, 2001). The concept of expert scaffolding moves novice learners to seasoned learners, and occurs when a quality relationship forms.

Psychosocial theories of development address the important issues people face as they attempt to establish their own identities, interact and form relationships, and identify their purpose in life. The theories of Bowlby (1969), Tinto (1975), and Vygotsky (1978) emphasize the value of relationships, and bring attention and deeper discussions to a topic that may otherwise be overlooked. In fact, their collective works helped form the theory of social connectedness. Social connectedness is defined as a short-term experience of belonging and relatedness, based on quantitative and qualitative social appraisals, and relationship quality (Van Bel, Smolders, Ijsselsteijn, & De Kort, 2009). On a continuum, quality relationships rank at the highest end of a helping relationship and are considered the most meaningful (DeCoster & Brown, 1982; Hunt & Michael, 1983; Kram, 1985). A subjective experience exists in every relationship which is an integral part to a person's development, and that concept lies at the core of social connectedness. Identifying such benefits bring greater understanding to what a quality relationship might entail.

People can acquire important aspects of self from cues of social connectedness. Small cues of social connectedness can lead people to share their emotions, and in some cases the emotions of another person can become their own (Cwir, Carr, Walton, & Spencer, 2011). A second link to social connectedness is enhanced motivation. As early as 18 months of age, infants can differentiate the intentions of others from their actions and imitate the former rather than the latter (Meltzoff, 1995). In other words, one is influenced by the actions of others even at

an early age, so the individuals whom one interacts with becomes important to his or her development. Longitudinal research in education found students who feel socially connected to peers and institutional constituents are more motivated in school (Furrer & Skinner, 2003; Goodenow, 1992; Hamre & Pianta, 2005). Figure 1.1 provides a visual of the relationship between the theories and concepts connected to this study.



*Figure 1.1.* Visual Representation of the Concepts Leading to Quality Relationships

Increasing motivation by social connectedness does not always translate into positive outcomes, but has evolved as technology continues to advance. With the prevalent use of cell phones, text messaging, email, Facebook, Instagram, and Twitter to stay socially connected, the feeling of belonging and relatedness remains an important outcome often left unmet (Van Bel et al., 2009). When Baumeister, Twenge, and Nuss' (2002) study told participants they would spend their lives alone, their performance on intellectual tests worsened. Belonging is a powerful, fundamental, and pervasive human need based on strong biological and psychological mechanisms (Patrick, Knee, Canevello, & Lonsbary, 2007). According to Maslow's (1968) hierarchy of needs, the importance of feeling connected follows one's safety needs and basic

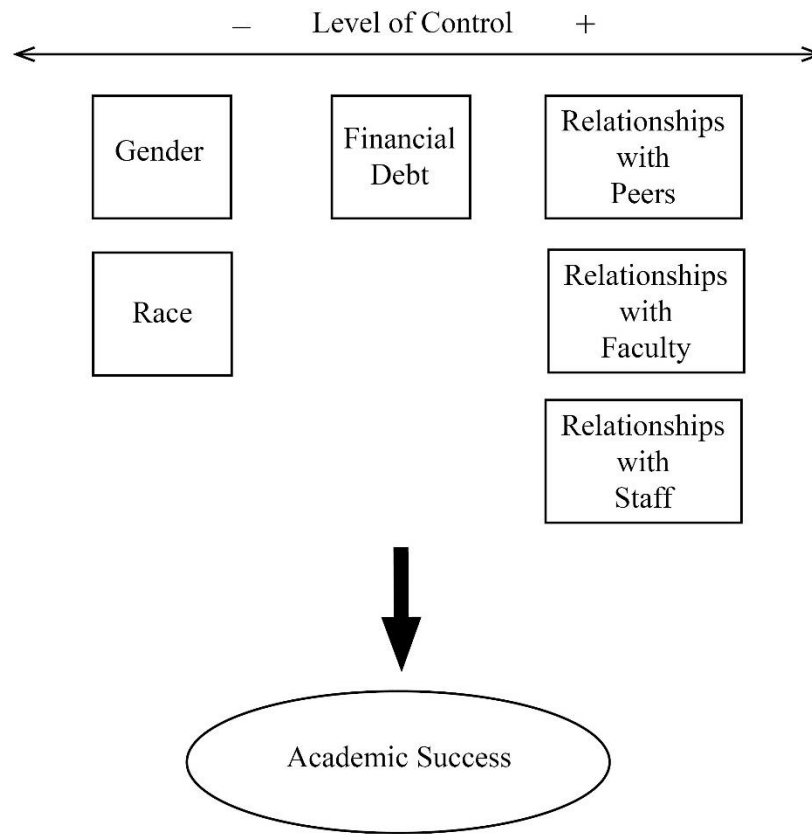
physiological needs. Further, the need to belong is important to the physical and mental well-being of a person (Baumeister & Leary, 1995).

Despite the clear benefits of technological advances, informal communication and smaller social networks have become the norm (McPherson, Smith-Lovin, & Brashears, 2006). The dilemma compounds by the inflexible nature of automatic habits of response toward others (Bargh, 1999) and the need for an immediate response has become an expectation rather than a pleasant surprise. While virtual communication is convenient, the absence of nonverbal cues to interpret presents a possible obstacle.

Given these circumstances, institutions must create an environment which minimizes factors that prevent positive relationships (Eisen et al., 2009, as cited in O’Keefe, 2013). Whether from the institutional perspective or the individual viewpoint, these factors have varying levels of impact. For example, one has no control over the demographic characteristics, such as gender and race, of a particular student. Along with gender and race, this study includes the leading factor preventing students from retaining and graduating; financial debt (Bowen et al., 2009). Although an institution has limited control over the financial debt of a student, college financial aid officials can assist or provide grants and scholarships, or offer low-interest loans. Similarly, students may exercise some control by obtaining the aforementioned grants, scholarships, and loans on their own.

Accumulating a large amount of debt undermines the physical and mental well-being of students (Drentea & Lavraka, 2000). Dealing with the personal issues of accumulating a large amount of debt potentially interferes with students’ ability to socially connect. Figure 1.2

provides a visual of the variables involved in this study while also describing the level of control an institution or individual may have on the variable.



*Figure 1.2. Visual Representation of the Variables in this Study*

While social connectedness can pertain to one's entire social network, the type of social connectedness for this study occurred at the individual level, referring to the feeling toward a particular person or group (Van Bel et al., 2009). The concept of social connectedness was timely and necessary in order to theoretically anchor and embed the NSSE descriptors, such as the sense of belonging, in the context of quality relationships. If predictive, individuals and institutions might strategically develop environments and opportunities in which relationships form.

### Definitions of Key Terms and Acronyms

- *Academic success*: In higher education, academic success refers to retention, an institution's ability to keep a student from enrollment to graduation (Berger & Lyons, 2005).
- *NSSE*: This acronym refers to the National Survey of Student Engagement.
- *Retention*: The term is understood as the return of a student to an institution from the end of one semester to the beginning of a specified subsequent semester until graduation, also known as persistence (Barton & Donahue, 2009).
- *SES*: This acronym refers to socio-economic status.
- *Student engagement*: This term is commonly used in the college setting referring to purposeful activities that in some way positively impact desired outcomes such as student development and success (Kuh 2001, 2003, 2009).
- *Student success*: This general term defined by higher education constituents includes student development, student engagement, grade point average, retention rates, and graduation rates (Defining Student Success, 2011). Student development outcomes cover areas such as writing, speaking, critical thinking, self-awareness, confidence, self-worth, social competence, and sense of purpose (Kuh, Kinzie, Buckley, Bridges, & Hayek, 2006).
- *Quality relationships*: This term refers to positive working and social relations in which one is committed to the success of the other (NSSE, 2012). The descriptors used in the NSSE survey related to quality relationships are: friendly, supportive, sense of belonging, available, helpful, sympathetic, considerate, and flexible.



## Summary

Institutions with retention and graduation rates higher than the norm significantly differ in the quality of interactions that form due to a supportive campus environment (Nelson Laird, Chen, & Kuh, 2008). The purpose of this study is to determine which relationships a college student forms are the greatest predictors of student retention. As institutions look to improve retention and graduation rates, examining more deeply how the quality relationships taking place on a college campus directly impact academic success will help guide institutions to purposefully tailor activities and programs in which specific relationship building can take place.

In accomplishing the purpose, the study used the 2012 NSSE responses in which students indicated the quality of relationships developed with peers, faculty, and staff. The NSSE, a reputable instrument, assesses the extent to which undergraduates participate in student engagement activities linked to high levels of learning and academic success (LaNasa, Cabrera, & Transgrud, 2009). The responses provided the statistical basis for determining which type of quality relationships formed by students was the greatest predictor of retaining a student.

Chapter 2 provides a review of the related literature beginning with the historical context of the topic and then transitions to the specific variables used in this study.

Chapter 3 describes the quantitative methodology for this study by addressing the statement of the research questions, an explanation of the research design, methodological approach, setting, population, data collection, description of variables, and data analysis. The chapter concludes with limitations and delimitations to further enhance transparency by describing circumstances that may affect or restrict the methods and analysis of research data.

Chapter 4 provides the results of the analyses conducted to inform this study, including discussion of methods used to screen the data and establish assumptions of normality. The

chapter reviews the results of frequencies and descriptive statistics, correlations for each of the independent and dependent variables, and results of the regression analyses. The chapter concludes with answers to the four research questions examined in this study.

Chapter 5 reviews the research and includes discussion and conclusions informed by the results from chapter 4. The researcher discusses implications for policy and practice on two general stakeholders: the institution and the student. Recommendations for future research are communicated, and the chapter wraps up with a final summary and final thoughts.

## **CHAPTER 2**

### **LITERATURE REVIEW**

As scholars seek ways to understand the impact relationships have on student development, and more specifically academic success, a number of theorists and researchers have formalized studies reflecting the benefits and issues that exist. A broad historical context serves as a foundation, and is accompanied by research addressing quality relationships. Three groups of individuals have been identified in this study as possible relationships an institution could help create which could lead to academic success: peers, faculty, and staff. In this section, the researcher reviews existing institutional programs that foster relationship building and how these relationships influence student development and academic success. Also, the researcher addresses a review of previous research in the areas of gender, race, and student debt.

#### **Introduction**

The process of adjusting to college involves several factors, and one key variable is the presence of key figures who walk along incoming students and help them transition to the college environment (Lamport, 1993). Previous research by Pascarella and Terenzini (1991, 2005) suggests supportive individuals, whether friends, family, or those hired by institutions, as essential to student success. Universities employ individuals to support students during their college experiences, both personally and academically. Among other things, a quality relationship between a student and a key figure, whether student, faculty, or staff member, can increase the likelihood a student does not withdraw from their course prior to completion (O'Keefe, 2013).

Astin (1993) concluded that academic performance positively associates with students' involvement with faculty and peers. Furthermore, the findings of Kuh, Douglas, Lund, and

Ramin-Gyurneks (1994) suggest students should evaluate the quality of their relations with peers and faculty. Moreover, Graunke and Woosley (2005) examined the effects of sophomore students' experiences and attitudes on their academic performance. Conclusions reveal satisfaction with faculty interactions is an important predictor of sophomore success.

The nature of social interactions and building relationships presents another important facet of the college experience (Pascarella, Terenzini, & Hibel, 1978). This facet includes the extent of a student's participation in the peer culture as well as the quality of his or her interaction with faculty and staff. Exploring the effects of gender, race, and financial barriers might contribute to greater understanding that leads to academic success for all students. The impact relationships have on academic success is difficult to measure, but may provide useful information that will lead to targeted practices and programming.

### **Retention and Graduation**

Looking at retention rates, which eventually lead to graduation rates, endures as the common method of measuring the return on investment and success of an institution. Retention is the return of a student to an institution from the end of one semester to the beginning of a specified subsequent semester, also known as persistence (Barton & Donahue, 2009). For the vast majority of students wishing to graduate with a degree, retention is a strong indicator of a student's progress and an institution's commitment toward the desired outcome (Berger & Lyons, 2005).

The earliest studies of undergraduate retention were recorded in the 1930's and used the term student mortality, defined as the failure of students to graduate (Berger, & Lyons, 2005). Since then, the graduation rate has consistently hovered around fifty percent (Swail, 2004). The seminal researcher, Vincent Tinto (1975), created national dialogue regarding undergraduate

retention by theorizing students who socially integrate into the campus community are more likely to graduate. Tinto's findings backed by Bean (1980) gave special attention to relational influence contributing to student retention. Since then, thousands of studies have focused on Tinto's theory addressing retention, one of the most widely studied areas of higher education today (Berger & Lyons, 2005).

Despite college offering knowledge, personal development, and a social connectedness, the greatest offering, and main objective for students, is graduating with a degree. The number of students who do not complete college with a degree rests at, or near, the top of issues facing higher education. With little change over the past few decades to impact the 44% of college students who fail to graduate (Bowen et al., 2009), the nation's leader has begun to address this issue. President Barack Obama pointed to the low proportion of young people with college degrees as representing "a threat to our position as the world's leading economy" (American Institutes for Research, 2010, p. 1). The federal government responded by setting up a system of grants in attempt to regain the highest graduation rate in the world by 2020 (Lewin, 2011).

This initiative continues to grow more challenging than ever. Once only an option for elite populations, college has broadened its acceptance to include a greater number of people, many considered high-risk. Federal funding often supports students who never receive a degree. The American Institutes for Research (2010) reported between 2003 and 2008 that the United States paid \$9.1 billion in subsidies to colleges to fund the education of students who withdrew and did not complete a degree. With the government accumulating large amounts of debt over recent years, fiscally responsible decision-making becomes increasingly important and retention and graduation rates become a natural indicator to measure appropriate use of monies granted to higher education.

Just as retention and graduation rates are important beyond institutional walls to secure funding, institutions must recognize that retention and graduation rates as critical components to the academic and financial success of a university (Archer & Cooper, 1999; Tinto, 2009). Universities incur lost revenue any time a student withdraws from the institution. Low retention also creates a long-term effect by creating a smaller alumni base to donate potential monies (Grizzell & McNeil, 2007). Additionally, graduation rates affect a college's national ranking, a powerful and valuable recruiting tool. Improving retention and graduation rates starts with identifying the reason students leave prior to obtaining a degree.

Aligning with the conceptual framework of this study, Heisserer and Parette (2002) state students may leave college because of “feelings that they don’t belong, feel rejected, and may not adjust to normal academic challenges associated with college life” (p. 2). According to McLean (1999), a sense of connectedness, or lack thereof, is a decisive factor in students leaving school prior to graduating. Most institutions address this area of concern by developing some form of support system to engage students (Jafee, 2007), often investing large amounts of time and resources (Tinto, 2009). Private institutions have produced higher retention and graduation rates than public institutions (ACT Institutional Data File, 2013) due to the emphasis and opportunities, such as the size of the campus and student-faculty ratios in class, to build quality relationships (Bowen et al., 2009).

Institutions form an atmosphere conducive to a successful integration with relevant programs, policies, and activities that provide a balanced social and academic experience (Turner & Thompson, 2014). Often, schools funnel efforts through student affairs programming such as orientations, learning communities, new-student seminar classes, tutoring, and mentoring, just to name a few, to address the various aspects one would leave an institution. As institutions become

increasingly diverse, some colleges concentrate their efforts specifically on high-risk groups such as first generation and minority students, while others reach out to marginalized groups like disabled students and lesbian, gay, bisexual, and transgender students.

On the contrary, Kalsbeek (2013) argues that retention and graduation rates are more an attribute of an institution's market profile and position than an achievement of their various academic and student affairs activities and interventions. Misaligned focus of institutional retention strategies could contribute to marginalized coordination of efforts and minimal impact. Efforts to enhance a market profile, such as higher ACT scores, conflicts with goals such as providing greater access and diversity for under-represented populations (Kalsbeek, 2013). Key components of a market profile include the socioeconomic profile of students as well as the institution's pricing and cost structure, prior academic performance, distance from home, and aid allocations (Bean, 1980; Kalsbeek, 2013). The market profile of an institution determines realistic retention strategies to employ in order to produce positive gains. Connected to an institution's market profile, Grizzell and McNeil (2007) suggest solely focusing on the desired outcome; high retention itself creates a culture that minimizes the option of withdrawing from an institution and attracts future students more likely to follow suit.

Effective institutions of higher learning use retention and graduation rates as the main measure of success (Anstine, 2013). These rates gauge whether a university does what it aims to accomplish in terms of mission and provides an academically enriching experience. In all, retention and graduation rates are a great indicator of academic success by producing positive outcomes for all parties involved: the federal government can justify its financial contributions, universities live up to their mission and capture revenue opportunities, and students accomplish their goal in earning a degree.

## **Gender and Relationships**

Peltier, Laden, and Matranga (1999) cited gender as a background variable related to retention. Gender bias exists against women from elementary school (Sadker & Sadker, 1986) to the college classroom (Hall & Sandler, 1982). Some aspects of the college experience continue to create disadvantages for female students (Allan & Madden, 2006). Hall and Sandler (1982) found these biases led to lowered self-confidence and achievement for college women. In Auster and MacRone's (1994) study participants self-reported that women, more so than men, engaged in avoidance behaviors, such as avoiding eye contact or pretending to read when called on by professors. These avoidance behaviors could cause women to hesitate in initiating interactions with others and forming quality relationships. An indication of this link occurred in the findings of Jaasma and Koper (1999), in which women reported higher levels of communication apprehension in the classroom. Salter and Persaud (2003) confirmed these behaviors in their study, finding women chose not to participate in class out of fear of criticism from the professor and peers.

In contrast, studies also exist demonstrating positive effects the college environment has on female students. Heller, Puff, and Mills (1985) reported women's confidence increased over their four years in college. Fritschner (2000) found that professors actually called on female students more than male students. This attention by professors may encourage active participation and engagement in classroom learning.

Additionally, studies have revealed personality trends differ among genders based on need and societal attitudes. Sax, Bryant, and Harper (2005) found that involvement in faculty research projects produced more progressive gender attitudes in male students, while female students reported more traditional attitudes regarding women's obligations to family life over



career achievement. These findings imply males take more initiative than females in activities that build faculty relationships because of societal pressures to pursue high-end jobs. On the contrary, Chodorow (1978) found priority differences in that women depend on social interactions more than men while men focus on autonomy and academic achievement. Gender differences have also emerged in student-faculty interactions. Studies further support women acting on their social interaction tendencies by reporting more frequent and positive interaction with faculty (Dwairy, 2004; Gnaulati & Heine, 2001; Sax et al., 2005).

### **Race and Relationships**

As a college degree has become an expectation and a necessity rather than a noble accomplishment for the select few, campus demographics have changed dramatically. Colleges and universities are rapidly becoming ethnically diverse communities (Justiz, 1994), causing continuous examination of race as a background variable to improve understanding (Reason, 2009). This effort to understand the manner students from different backgrounds experience quality relationships creates the possibility to identify particular groups for which special attention is necessary. In studies, student-faculty relationships have varied based on race and ethnicity (Dwairy, 2004; Gnaulati & Heine, 2001). Gnaulati and Heine found that Caucasian students were more likely than African American students to establish relationships with faculty and staff.

In general, Braxton, Duster, and Pascarella (1988) found minority students were more likely than their counterparts to depart from college without a degree. Minority students whose cultures and communities do not resemble that of the college present a challenge from both perspectives. A student is less likely to pursue a mentor of a different race, or gender, while the mentor has difficulty connecting with a student who comes from an unfamiliar background and

views the world through a different lens (Jacobi, 1991). In the Anaya and Cole (2001) study, Latino students did not report a significant relationship between faculty interaction variables and academic achievement, suggesting that perhaps cultural boundaries between faculty and students played a role in the findings (Anaya & Cole, 2001).

Even with cultural differences, previous studies have found value for minority students to develop quality relationships. At a predominately white residential university, Thompson and Fretz (1991) still identified a need for African American students to socially integrate. Hathaway, Nagda, and Gregerman (2002) reported working with faculty on research projects linked to pursuing a graduate degree, especially among African American, Hispanic, and Native American students. This result indicates that mutually satisfying work such as research can bridge existing cultural boundaries. Overall, these studies indicate student-faculty interactions benefit all students but may be harder to initiate with individuals from different cultural backgrounds.

### **Financial Issues for Students in Higher Education**

During the 1950's, the federal government assumed the responsibility with states to provide the college experience to a larger population as well as to those previously denied such opportunities (McPherson & Shapiro, 1998). With drastic cuts in state appropriations, recent decades have seen a shift of the financing burden from the taxpayers to the student (Priest & St. John, 2006; Weerts & Ronca, 2006). The federal level has placed an emphasis on student loans rather than grants (Hearn & Holdsworth, 2004). With extensive research, Weerts and Ronca found tuition has continued to rise without a corresponding increase in funds for need-based grants and state appropriations. High tuition, some need-based grants, and high student employment to balance significant loans emerge as the primary combination to fund college

(Dwyer, McCloud, & Hodson, 2012), which creates a financial burden interfering with student success.

The expansion of enrollment, coupled with a corresponding lack of appropriate funding, has resulted in a massive debt crisis for students. Today's college student faces paying for college expenses with additional debt (Dwyer et al., 2012). Individuals in the class of 2014 graduated with an average student loan debt of \$33,000, nearly double the amount borrowers had to pay 20 years prior, even when factoring in inflation adjustments (Izzo, 2014). The deregulation of the banking industry provided an avenue for students with poor credit ratings and without sufficient collateral to obtain loans (Smith, 2010).

While student loans originated with government backing and were subsidized under the Stafford Loan Program, changes occurred in the 1990's when the banking industry successfully lobbied for less restrictive eligibility and more restrictive repayment requirements. The combination of student need and increased availability of higher rate bank loans produces high levels of student debt, which in turn forces students to dwell on their immediate crisis rather than focusing on the long term benefits, such as higher earnings and better career opportunities (College Board, 2009). Students in this position are left with a life altering decision of whether to accumulate more debt and obtain a degree, or depart from college and minimize the existing debt.

Much like taking on substantial debt for home ownership, Bowen et al. (2009) believes educational debt should be viewed in a similar manner and considered a worthy investment. In fact with graduation rates higher at private institutions, 56%, than public, 45%, (Bradford & Farris, 1991), financial debt might not demonstrate a significant factor for students departing from college without a degree given public universities having significantly lower tuition costs

than private universities. Although healthy endowments could mitigate the tuition differences between private and public institutions, further research supports the implication and has shown positive effects of student debt on college completion (Cofer & Somers, 2000; Drentea, 2000). Students comfortable taking on debt may be in a better position to complete college than students working long hours while taking on a full class load. Drentea (2000) indicates debt can actually reduce anxiety and may be less stressful for a student than balancing long work hours to support their schooling. Accumulating large amounts of debt may pose a psychological challenge for many students to overcome, but such debt creates a path to earn a college degree and pursue better opportunities.

Additional studies related to debt found negative outcomes when students accumulate high levels of debt, and note that high debt is a leading factor for students not graduating (Bowen et al., 2009). According to Christie and Munro (2003), high loan balances may simply point to other issues, such as family dysfunction, personal problems, or poor planning. Although pre-existing issues may not be the case for all students, pressures associated with debt can cause problems in and of themselves. A study by Drentea and Lavraka (2000) reveals too much debt can undermine the physical and mental health of students. These additional effects and pressures of accumulating a large amount of debt potentially interfere with students' academic success.

In Washington, a study of implementing need-based grants reported improved retention rates (St. John, 1999), while an Indiana study failed to find a significant relationship between state grants and student retention (St. John, Hu, & Weber, 2001). A more recent large-scale study conducted by Titus (2006) found need-based aid positively correlated to completion in four-year institutions across 48 states, but did not include or explore non-need-based funding. In general,

easing the financial burden associated with attending college appears to improve retention, and much of one's debt can be linked to socioeconomic background.

Pascarella and Chapman (1983) reported that a higher socioeconomic status (SES) had a positive effect on academic and social integration, and ultimately influenced one's decision to remain in college. A more recent study by Chen and St. John (2011) suggested retention is affected by socioeconomic status, with high-SES students having 55% greater likelihood of persisting than their low-SES peers, providing evidence that debt increases the likelihood of dropping out of college (Ishitani, 2006). Although accumulating debt is inevitable for many students, the increase in educational loans provides more of them with the opportunity to attend college.

While becoming a lifelong learner is important for many students, Dwyer et al. (2012) indicate graduation as the main goal for individuals entering college, opening the door to greater career opportunities. With many students struggling to afford college tuition, retention and graduation rates have significantly lagged behind corresponding increases in enrollments. More specifically, students less advantaged appear to exhibit added anxiety and are more susceptible to leaving college without a degree (Bowen et al., 2009). Debt has become a viable option for many students but risks associate with borrowed resources. Findings have remained consistent in that students of low socio-economic status have significantly lower persistence rates than other students (Pascarella & Terenzini, 1991), which would further suggest that students carrying greater debt will be less likely drop out.

### **Students' Quality Relationships with Peers, Faculty, and Staff**

Virtually all adolescents attend school and receive support from individuals during early and middle teens, but in the late teens these supports begin to diverge and disappear (Settersten

Jr., Furstenberg Jr., & Rumbaut, 2005). Coffman and Gilligan (2002) found that students who withdrew from college prior to graduation were less likely to identify someone on campus with whom they had developed a significant relationship. Creating incentives or including quality relationship building into job responsibilities provides a way to support an increasingly ill-equipped population. Daloz Parks (2008) describes the primary objective of a quality relationship as the ability to become dependent outside of self, while at the same time having someone to champion the betterment of one's life. Parks refers to this as mentoring, considered the highest level of a helping and meaningful quality relationship (DeCoster & Brown, 1982; Hunt & Michael, 1983; Kram, 1985; Shapiro, Haseltine, & Rowe, 1978).

Engineering faculty at the University of Michigan first studied the mentoring relationship in higher education (Johnson, 1989). However, not until 1988 did the research community make an attempt to identify the roles and functions involved in a mentoring experience and how students perceived these experiences were perceived after an attempt was made. This high-level type of relationship has become a national priority (Girves, Zepeda, & Gwathmey, 2005), evident by the amount of research and hundreds of formalized programs and institutional practices that include a mentoring component. With this amount of attention on quality relationships within higher education, researchers seek to identify all positive outcomes.

Olian, Carroll, Giannantonio, and Feren (1988) describe two broad benefits obtained from a relationship found in a mentorship program: academic and career benefits through the transfer of knowledge, and psychological benefits from the emotional support and friendship within the relationship. Jacobi (1991) recognized the role model element as one additional benefit of a mentorship program that does not necessarily take place in other relationships. These benefits can be accomplished in various ways within a quality, or mentoring, type of relationship.

Philip and Hendry (2000) have identified five types of quality relationships in which mentoring may occur with young adults: classic mentoring (one-on-one relationship between an experienced adult and a younger person), individual-team (young group of people look to an individual or a few individuals for advice), friend-to-friend (provides a safety net, common among women friends), peer-group (among a group of friends, often when exploring an issue), and long-term relationships with risk taking adults (similar to classic mentoring, but the mentee is considered at-risk).

Research has shown that mentoring relationships may be informal or formal, long-term or short-lived, planned or spontaneous (Luna & Cullen, 1995). Difficult to define, informal mentoring is attributed to quality relationships between students and faculty, staff, and even peers (Jacobi, 1991; Lasley, 1996). Unstructured informal mentoring relationships still exhibit effectiveness for both the mentor and mentee (Chao, Walz, & Gardner, 1992). The relationships tend to develop naturally and involve the mentor and mentee seeking each other out, typically focusing on long-term goals (Campbell & Campbell, 1997). In contrast, formal mentoring relationships have shown to be supported by educational institutions (Chao et al., 1992). Formal mentoring relationships often have a third party who matches the mentor with the mentee. The duration of informal and formal mentoring relationships highly varies; some mentoring relationships may last only one meeting (Phillips-Jones, 1982) while others last six months to a year (Kram & Isabella, 1985), or even an entire decade (Levinson, Carrow, Klein, Levinson, & McKee, 1978).

No matter the formality or the duration, programs that address social interaction in higher education can enhance student success (Krause, 2001). Frequently, mentoring in higher education associates with formal programs and relationships directed at high-risk,

underrepresented, and underachieving student populations in an attempt to improve retention and graduation rates (Astin, 1993; Erkut & Mokros, 1984; Jacobi, 1991; Kinzie, Schuh, Whitt, & Kuh, 2005; Pascarella & Terenzini, 1991; Reynolds, 2009), but the benefits suggest that these programs should extend to all students. Students' success has been attributed to the quality relationships they can sustain throughout their college career. In a study conducted by Merriam and Thomas (1986), all but one participant attributed success at least in part to a quality relationship. Levine and Nidiffer (1996) studied 24 high-risk college students and their primary finding also pointed to a participant's success being heavily influenced by another person considered to be a mentor. The mentor provided guidance during a critical point in the students' lives, which instilled hope and belief that the student could achieve more than he or she thought was possible. A mentor has an opportunity to see beyond initial impressions to a more complete picture of the individual and provide appropriate support and guidance when necessary.

Even with the benefits evident in quality relationships for college students, obstacles that inhibit regular occurrences of such interactions exist. Online classes continue to grow in popularity (Allen & Seaman, 2011), limiting on-campus presence and the opportunity for relationship building. Financial constraints also force students to maximize working hours to afford college (Curtis, 2007; Holmes, 2008), limiting students' availability to develop a quality relationship. According to Watts and Pickering (2000), the pressures of work added to the existing academic pressures proves difficult for the average college student to manage, leading to increased anxiety or depression. Although quality relationships could benefit these students, the window of opportunity is extremely small with such limited availability.

Nevertheless, altering schedules and setting aside the necessary time to develop quality relationships may not be advantageous for all students. With the use of a rigorous experimental



design, Rodger and Tremblay (2003) found quality relationships at the mentoring level have a significant effect on higher grades, but not on retention rates of mentored traditional, first-year students attending a four-year institution. Earning high grades will mean much less if a student withdraws, never obtaining a diploma.

Overall, however, the majority of findings have indicated quality relationships positively impact student retention and grades of undergraduate students (Campbell & Campbell, 1997; Freeman, 1999; Kahveci, Southerland, & Gilmer, 2006; Mangold, Bean, Adams, Schwab, & Lynch, 2003; Pagan & Edwards-Wilson, 2003; Ross-Thomas & Bryant, 1994; Salinitri, 2005; Sorrentino, 2007; Wallace, Abel, & Ropers-Huilman, 2000). Although the development and structure of quality relationships may vary, every quality relationship provides an opportunity to grow and learn; and to become better equipped to engage and influence others.

### **Students' Relationships with Peers**

Studies have shown peer groups as the dominant change agent of student development during the college years (Astin, 1993; Pascarella & Terenzini, 1991). Furthermore, Dalton and Crosby (2010) stated that college peer culture provides perhaps the single most important influence on student learning and behavior, yet remains one of the least studied and understood aspects of higher education. A college student's peers create the sociocultural norms in the midst of which a student grows and develops. Norms develop through interpersonal interactions and change under the pressures of direct approval or disapproval from trusted peers. Research emphasizes the importance of student interaction on campus and the relationship to personal development and retention (Astin, 1993; Pascarella, 1985; Tinto, 1975; Weidman, 1989).

**Benefits.** Institutions commonly refer to any type of student interaction as falling under the student engagement umbrella. Positive interactions play a significant role in a student feeling

socially integrated within the campus community. Developing new relationships constitute a set of social adjustments that create social uncertainty in many students. Through these transitions, Erkut and Mokros (1984) describe the basic tenet of psychological theories of identification as people emulating models perceived as similar to themselves in terms of personality characteristics, background, race, and sex. Students who use proactive rather than reactive social adjustment strategies, and students who invest considerable psychological energy into social interactions with their peers, grow in their level of social confidence and certainty (Braxton, Hirschy, & McClendon, 2004). Having great influence, relationships with peers becomes much more than just able to get along.

Forming relationships with peers and getting involved in the social life of college requires both time and considerable investment of psychological energy (Braxton et al., 2004). As early as the first semester in college, benefits of having a close relationship with a peer emerge. Lavin (1965) and Spady (1970) found close friendships with other students positively correlate to academic endeavors. With this finding, a student might possibly consider investing time and energy into social interactions with others who also value learning. Much like studying for a class, peer interactions can become a useful resource in the learning process through support, encouragement, and academic dialogue.

Although focused on middle and secondary school students, Hallinan (1983) found that an individual can be influenced by his or her friends in a way that impacts academic performance. Epstein (1983) found that students having high-achieving friends had higher scores a year later than similar students with low-scoring friends. Moreover, Endo and Harpel (1982) conducted a causal study and found students who persisted had higher levels of contact with other students. Furthermore, Chen and St. John (2011) revealed social integration was a

significant predictor of student retention. With findings that support a social environment which allow the formation of quality relationships, implementing programs that foster such relationships may emerge as valuable.

**Programs.** As students enter college, transitioning to a new community may challenge many students. Not only do students struggle with this transition but also they struggle to deal with parents' relative inaccessibility to help them navigate through life as before. The ability to survive and adapt leads to social integration. Possessing high levels of self-efficacy allows a student to transition and thrive in a new community (Bandura, 2001).

Many institutions are taking an initiative to promote social integration and help with the college transition. To demonstrate their commitment, institutions provide an orientation at the beginning of the academic year for all incoming students. Generally, the orientation allows time for social interaction and the forming of relationships led by an upper class student leader. Attending orientation positively affects the relationship development of students (Pascarella, Terenzini, & Wolfe, 1986). Such orientation programs enable students to learn the desired behaviors, values, and attitudes to function successfully in the campus community, leading toward academic achievement.

Universities have also implemented peer-mentoring programs in attempt to create an environment which fosters quality relationships that will influence the overall student experience. Results from Sanchez, Bauer, and Paronto (2006) indicate students engaged in peer-mentoring were satisfied with their university experience during the semester of the mentorship as well as the end of the following semester. Jacobi (1991) points out that a key component in any successful mentoring relationship involves utilizing student leaders as mentors, exhibiting greater experience, influence, and achievement over the mentee. Jacobi also notes that the

mentor often serves as a valuable role model to the mentee. Some researchers describe mentoring as the highest end on a continuum of helping relationships (DeCoster & Brown, 1982; Hunt & Michael, 1983; Kram, 1985). Shapiro et al. (1978) designed a continuum with points: peer pals, guides, sponsors, and mentors. On this rough scale, mentors represent a type of quality relationship considered to be the most meaningful.

Mentoring relationships can take many forms but typically focus on the achievement of the mentee. Empirical results from Fox and Loma (2006) suggest that peer-mentoring does have a positive effect on the academic performance for the mentees. Even more rewarding, their focus group interviews also revealed that both mentors and mentees claimed to benefit significantly from their involvement in the project. Kram (1985) contends that a major misconception about mentoring centers on the belief that "the primary beneficiary in a mentor relationship is the junior person" (p. 195). Similarly, Phillips-Jones (1982) describes concrete benefits that accrue to the mentor, including: development of a dependable mentee, ability to spot and develop new talent, and repaying past debts. Achieving a peer mentoring program where not only the mentee and mentor are positively impacted but where improved academic success occurs by both individuals is ideal.

**Issues.** For a successful mentoring program, Levinson et al. (1978) recommend that mentors be 8-15 years older than the mentee, which refutes any sort of peer mentoring. Most students would not fit the profile as viable candidates for becoming an effective mentor. On the positive side, nontraditional students, individuals age 25 and older enrolled in college credited academic programs (Kasworm, 1990), make up the fastest growing segment of the student population. Between 2000 and 2010, the enrollment of students under age 25 increased by 34% while enrollment of students 25 years of age and older rose 42% during the same period (NCES,

2012). The Council for Adult and Experiential Learning estimated that 43% of students in U.S. higher education are 25 years of age or older (CAEL, 2000). From 2010 to 2020, NCES (2012) has projected a rise of 11% in enrollments of traditional students and a 20% enrollment increase of students age 25 and older.

With this increase in the nontraditional population, opportunities emerge for more peer mentors meeting the age recommendation from Levinson et al. (1978); however, the nontraditional population typically has different objectives and needs than a traditional student. Working a full-time job, nontraditional students generally attend part-time and do not live on campus, causing limited availability to develop quality relationships with peers. Often times, nontraditional students have families that take priority over participating in a mentoring program or developing quality relationships with classmates. Even if relationships develop with nontraditional students, the age difference and life circumstances create barriers that could impede any sort of strong connection or influence.

Researchers have found the connection between quality relationships and academic performance might only be effective for certain groups. Results from Ullah and Wilson (2007) revealed gender plays a part on the impact relationships have on students. While female students' academic achievement positively associated with the relationships formed with peers, the study also reported a decrease in academic performance in males as student relationships with peers improved. Further research identifying specific populations producing positive outcomes might be relevant in order to maximize relationship focused programming.

Institutions should also consider other aspects choosing to provide programming that targets relationship building. For example, institutions may have the wrong approach when designing a formal mentoring program. Conrad (1985) concludes, "At least in our culture, where

choice is a strongly valued part of relationships, formal arrangements have only seen limited success” (p. 300). Other than peer mentoring programs bringing about good feelings, little research has found other positive outcomes. Although close relationships with friends have been found to influence academic endeavors (Hallinan, 1983; Lavin, 1965; Spady, 1970), specific peer-mentoring programs have made no impact on grade points average or graduation rates (Sanchez et al., 2006). Furthermore, research conducted by O’Shea (1969) concentrated on the association between peer relationships and academic achievement, and revealing an inverse relationship, in which more time spent socializing with peers resulted in less time devoted to serious study. This result indicates students lack the experience and knowledge of knowing the appropriate amount of peer interaction at times, often producing negative effects while having good intentions.

### **Students’ Relationships with Faculty**

From the surface, forming quality relationships with faculty appears to benefit students because faculty members have a solid understanding of the expectations and demands needed for academic success. Considering the findings of Pascarella and Terenzini (1978) that interactions outside the classroom contribute to student learning and development, faculty break down barriers and attempt to build relationships with students. Exploring these interactions is of interest when developing the student as a whole, and might spark additional interest if linked to academic success.

**Benefits.** Possible benefits from student-faculty relationships have been widely documented (Jaasma & Koper, 1999; Komarrju, 2010; Myers, 2004; Martin, Myers & Mottet, 1999; Wolf-Wendel, Ward, & Kinzie, 2009). With private universities having higher graduation rates than public universities (Bradford & Farris, 1991), Bowen et al. (2009) attribute private

institutions' success to smaller class sizes and increased student-faculty relationships.

Researchers revealed that faculty consistently identified by students as having the greatest impact were those instructors who frequently interacted with students outside the classroom (Wilson, Mason, & Ewing, 1997). Students successful in knowing even one faculty member closely are likely to feel more satisfied with their college life (Graunke & Woosley, 2005; Komarraju, Musulkin, & Bhattacharava, 2010; Wilson, Mason, & Ewing, 1997), show gains in intellectual achievement (Graunke & Woosley, 2005; Wilson, Mason, & Ewing, 1997), and aspire to go further in their careers (Komarraju et al., 2010).

Students interacting with instructors have seen positive benefits for decades. One of the earlier studies conducted by Jacob (1957) revealed that normal and frequent interactions between students and faculty outside the classroom had “peculiar potency” (p. 8). Positive relationships between a student and a faculty member have found to enhance motivation (Jaasma & Koper, 1999; Komarraju et al., 2010; Martin et al., 1999; Myers, 2004; Wolf-Wendel et al., 2009). Furthermore, Engstrom (2008) found that quality relationships involving faculty contributed to students' increased confidence and motivation to succeed in college. Several studies have also confirmed student-faculty interactions benefit other aspects important to an undergraduate student: personal development (Pascarella & Terenzini, 1978), satisfaction with faculty (Astin, 1993), perceptions of college quality (Theophilides & Terenzini, 1981), educational aspirations (Astin & Panos, 1969), and academic achievement (Astin & Panos, 1969; Pascarella, 1980). These positive outcomes support quality relationship development between faculty and students, but other studies have concentrated specifically on student development tied to academic achievement.

Chickering (1969) studied the concept of informal student-faculty interactions and reported a direct influence on student development of intellectual competence, improved purpose, and sense of autonomy. Chickering further suggests that the impact on student development of intellectual competence is observable in academic achievement. Additionally, Spady (1970) hypothesized interactions with faculty have an independent and direct influence on intellectual development, specifically grade performance. According to Pacarella et al. (1978), the evidence in Chickering (1969) and Spady (1970) is indirect and therefore assumed students' motivation for academic achievement is subject to the influence of faculty interaction that occurs outside the classroom. This caused Pascarella and Terenzini (1978) to further examine the influence student-faculty interactions outside the classroom have on academic performance. The findings supported Chickering and Spady and indicated that student-faculty interactions have influence on student motivation for academic success, even over other predictors such as secondary school performance and personality dispositions. Students frequently interacting with faculty tended to perform academically better than their pre-enrollment characteristics while students who seldom met with faculty outside the classroom tended to achieve lower than their predicted levels.

More research followed to further investigate the power relationships with faculty has on predicting academic performance. Findings were consistent with Anaya and Cole (2001), who reported high quality student-faculty interactions link directly to higher grade point average. A more recent study confirmed that student-faculty relationships have a positive effect on overall academic achievement as measured by grade point average (Ullah & Wilson, 2007). Moreover, Endo and Harpel (1982) found students who persisted had higher levels of contact with faculty.



These findings cause further examination on how student-faculty relationships compare in relation to other relationships developed by students and brings value to this research.

In 1993, Astin conducted one of the more comprehensive studies in which he examined approximately 500,000 students in 1,300 institutions of all types over a 25-year period. Astin found that student-faculty interaction significantly correlated with every academic achievement outcome, including grade point average. The strongest correlation discovered in student-faculty interactions outside the classroom associated with college satisfaction. Students who interact frequently with faculty are more satisfied with all aspects of their college experience. Astin proposed student satisfaction should be considered as an intermediate outcome of college.

Tinto (1993) reported institutions with low rates of student retention are those in which students report low rates of interaction with faculty. Conversely, institutions with high rates of student-faculty interactions yielded higher retention rates. For students lacking a positive adult figure in their lives, having an instructor make time outside of class and know their name can spark a transformation (Schreiner et al., 2011). Student-faculty interactions outside of class have been found to be particularly beneficial in promoting persistence among high-risk students, such as low-income, first-generation students (Tinto, 1975). Pascarella and Terenzini (1991) mention additional benefits when reporting that out-of-class interaction with faculty has a statistically significant direct effect on career interest and career choice.

Both faculty and students must recognize the influence faculty relationships outside the classroom have on a student's future. The common theme in relationships contributing to student success is that the faculty member effectively communicates his or her belief in the student. Faculty members effective at building relationships outside the classroom articulated that interaction with students was just part of their responsibilities as a faculty member (Schreiner et

al., 2011). This tacit understanding is supported by Wilson, Gaff, Diensky, Wood, and Bavry (1975) who concluded “the relationships that faculty and students develop outside the classroom may well be the part of teaching, which has the greatest impact on students” (p. 107). The success of these relationships depends on the faculty’s willingness to invest time and energy beyond institution requirements.

**Programs.** Studies have highlighted the value of informal contact placed on student-faculty interactions occurring outside the classroom (Cox & Orehovec, 2007; Pascarella & Terenzini, 1980). With evidence stating faculty interactions with students occurring outside the classroom positively correlates with student retention (Bean, 1980; Pascarella, 1980; Pascarella & Terenzini, 1979; Terenzini & Pascarella, 1977), institutions believe in the value of these relationships and have implemented strategies to encourage student-faculty interactions. Light (2001) found that many faculty view mentoring as an important component of academic advising, and that one-to-one student-faculty mentoring has significant and positive influence on students. Outside the traditional classroom, some universities have implemented a “take-a-professor to lunch” program to promote student-faculty relationships (Cox, 2011). Others are taking immediate action once students step on campus by assigning faculty to assist students during student orientations and move-in days (Cox, 2011). According to the Council on Undergraduate Research (2013), these types of interactions lead to student success in terms of greater learning, higher retention, and increased development of critical thinking.

A more popular initiative taking place in higher education involves the offering of a first-year seminar class. Of the accredited four-year colleges and universities in America, 94% reported offering a first-year seminar to at least some of their students (Policy Center on the First Year of College, 2002). The primary goals of first-year seminar programs are to increase student

performance, persistence, and graduation by integrating students into the university community both academically and socially (Pascarella & Terenzini, 2005; Tobolowsky, Mamrick, & Cox, 2005). On average, students participating in a seminar program earn higher grades (Cannici & Pulton, 1990; Fidler, 1991), participate in more campus activities or services (Cannici & Pulton, 1990), and report more out-of-class connections with faculty members (Davis-Underwood & Lee, 1994; Fidler, 1991; Goodman & Pascarella, 2006) than those students not in a seminar program. A first-year seminar grade, according to Barefoot, Warnock, Dickinson, Richardson, and Roberts (1998), provides a more accurate predictor of retention and success than either a student's Scholastic Aptitude Test (SAT) score or a student's high school rank. Unfortunately, the research does not indicate which course components cause these outcomes to positively influence persistence to the second year of college (Porter & Swing, 2006) and increasing difficulty arises to find willing full-time faculty to teach in the program (Barefoot et al., 1998).

Adapting to the college environment can challenge many students as they transition to greater independence. Although first-year seminar programs help students transition to greater independence, Kuh (1981) indicates that student-faculty interaction is the key component to a student's experience, especially when the faculty member can provide additional academic guidance. Adult figures, such as an advisor, are assigned to students for academic guidance and assist with all types of institutional questions. The most important factor in advising students considered at-risk is helping them feel that they are cared for by the institution (Heisserer & Parette, 2002). Overcoming the sense of isolation and separateness allows a student to succeed in a challenging environment. Academic advising programs are designed for relationships to develop between students and faculty, because advising influences the likelihood of retention (Seidman, 2006).

A deeper level of relationship building occurs in mentoring programs. Mentoring programs designed to align students with a faculty member accomplish the needed student-faculty interaction outside the classroom. Unique to this relationship, faculty mentors can promote involvement by providing their mentees with challenging assignments, suggesting educational activities on campus, or sponsoring them for special educational opportunities. Mentoring emerges the ideal program for universities because the focus encompasses all aspects of a student's life where support and guidance may be needed.

**Issues.** Boyer (1987) questions whether a professor should serve as a mentor at the undergraduate level. According to Olian et al. (1988), student-faculty mentoring may create problems due to the formal authority a faculty member has over the student. Erkut and Mokros (1984) assert the basic tenet of psychological theories of identification is that people emulate models perceived similar to themselves in terms of personality characteristics, background, race, and sex. The leadership and faculty of these colleges and universities are traditionally white and male; students of color and women may have less access to informal networks and other sources of social support. They may find the institutional environment, and its underlying values, confusing or alienating. Students of color and women may become victims of subtle or overt racism or sexism. Further, students of color are more likely than white students to have attended inner city high schools (Peltier et al., 1999) and to be first generation college students (Chen & Carroll, 2005), both of which characteristics are associated with academic difficulties and lower retention rates in college.

One study directly assessed the relationship between natural mentoring and academic success among undergraduates. Erkut and Mokros (1984) conducted a survey completed by 723 students at six different liberal arts colleges. While all respondents could identify a professor

who had an impact on them by demonstrating the kinds of commitments, skills, and qualities that they saw as important for themselves, differences in student outcomes associated with the gender of the student in relation to the mentor. The researchers, however, suggested that the mentor relationships are by-products rather than causes of high achievement.

Unfortunately, neither empirical nor theoretical research has kept pace with program development. The concept of mentoring remains unclear and imprecise, and the effectiveness of informal or formal mentoring in promoting undergraduate academic success is assumed rather than demonstrated (Jacobi, 1991). Pascarella, Terenzini, and Hibel (1978) examined the effects of six different types of faculty contact on academic achievement of approximately 500 students. Results showed a curvilinear relationship between contact with faculty and academic achievement, such that "the first few informal interactions with faculty . . . appear to be the most important" (p. 457). To the extent that mentoring connotes frequent contacts over an extended period of time, mentoring may prove an inefficient strategy for promoting academic success.

The outcomes associated with student-faculty relationships may vary depending on the quality of the interactions. Substantive interactions between faculty and students influence knowledge acquisition and skill development more than less-focused contact (Kuh, 2001). Student development of higher-order cognitive skills suggest the purpose and quality of student-faculty interactions as more important than their frequency. According to Levine and Nidiffer (1996), an instructor must see forming relationships with students as an integral role and identity of a faculty member. The focus would no longer be on teaching but rather on the student and his or her learning. Training faculty may be necessary to best utilize the development of student relationships, which takes more time, time which faculty currently struggle to find.

The quality of student-faculty interactions contributes to the overall development of college students. Findings suggest that informal settings are rich in their potentialities for faculty influence on students' academic success (Pascarella & Terenzini, 1978). Interactions outside the classroom allows faculty to address specific academic concerns as well as personal issues that may impede student development. Pascarella (1980) writes, "This suggests the possibility that colleges and universities may be able to positively influence the extent and quality of student-faculty contact. . . It becomes important to determine the extent to which it might be influenced by purposeful institutional policies" (pp. 565 – 566). Although institutions advocate student-faculty interactions due to the influence on student success, challenges arise in arranging such interactions.

Despite the positive outcomes, the frequency of informal out-of-class interactions with faculty continues to decrease (Cox & Orohovec, 2007). With no specific policy or program, faculty now spend more of their non-teaching time in pursuit of research and publications, leaving meaningful relationships with adults to student affairs' personnel (Kuh, Schuh, & Whitt, 1991). Faculty might be consumed with their own academic success consisting of research and publishing, especially in instances when faculty are attempting to become tenured.

### **Students' Relationships with Staff**

Political and financial imperatives have pressured universities to provide high quality student services, highly regarded as an important function of the modern institution (Small, 2008). Enhancing the student experience goes beyond the student life personnel and is recognized by many universities as a primary objective. Those who hold positions of power on university campuses cannot underestimate the influence of collaborating with students (Bolster, 2011). Often, student-staff interactions become the face of a university and play an integral part

in constructing an institution's identity. Universities recognize the growing expectations from students and the benefits of providing staff services and programs involving interactions outside the classroom.

In the context of increased faculty workloads, staff can provide valuable services to students so that faculty can maximize their efforts on teaching and research (Small, 2008). Strong administrative support systems that assist students in their path to academic success are essential (Small, 2008). Institutional services provide varying levels of relationship building that contribute to student success.

**Benefits.** For many students entering college, the transition becomes difficult because of the significant role parents have played until this point. Even though college creates a sense of independence, a void exists that only another adult who is knowledgeable and genuinely caring for the success of the student can fill. Due to 12-month contracts and working 40 hours a week on campus, staff members become likely candidates to fulfill the role of an adult figure developing quality relationships with students.

Every student in a study conducted by Pak et al. (2006) described a positive impact caused by the relationship of a faculty or staff member who had given him or her the confidence to succeed. The stories revealed faculty and staff gave them a sense of belonging, infusing a sense of hope along with the confidence to succeed. According to Rendon (1994), this source of support enables students to succeed and is exceedingly important for high-risk students, but these relationships could prove beneficial to all students. Values lie not necessarily in the amount of time spent interacting with staff, rather in the staff member's availability and willingness to show the student that he or she cares (Schreiner et al., 2011). In a study by Braxton et al. (2004),

students indicated influential campus personnel possessed the following characteristics: positive, knowledgeable, passionate, humorous, and challenging with high expectations.

Acknowledging influential characteristics is important for institutions having concern for growth and development of its students, but identifying overall benefits is equally valuable.

Braxton et al. (2004) found each interaction with staff and administrators shapes the student's perception of the university's commitment to student welfare. When positive interactions occur, increased confidence in the university's culture emerges (Bean & Eaton, 2000), which in turn creates self-efficacy in students that they can thrive in college (Braxton et al., 2004). The emotional support taking place in these relationships becomes essential for students who lack confidence or assertiveness to take a more active role in their education.

The common thread in relationships contributing to student success centers on the staff member effectively communicating care and encouragement for the student (Schreiner et al., 2011). "It was clear these staff were mission-driven individuals whose focus was on the student, rather than on the institution or the demands of their jobs" (Schreiner et al., 2011, p. 332). From the students' perspective, other behaviors exhibited by staff also made a difference: motivating students, being available and communicating students' importance, relating to students on their level, and pushing them to excel. With increasing enrollments of first generation and at-risk students (Engle & Tinto, 2008), staff may be the only adult figure in the student's life who displays a high commitment level to learning and a belief in the student's academic success.

**Programs.** Programs advocating interactions with students often link to the highest level of relationship development: mentoring. Lester and Johnson (1981) detail mentoring in the educational setting as a one-to-one quality relationship that may include a student, faculty, or staff member. The formal and informal aspects of mentoring base on modeling behavior and



extended dialogue. Programs typically center on students identified as needing modeling behavior or a one-to-one relationship more than the average individual.

More college students have experienced the modeling and extended dialogue by a staff member at an earlier age. Common at elementary and secondary levels, a staff member in the classroom provides additional support. Assigning staff to particular students, usually those with problems of learning, behavior, or attention, gives the students more individual attention and helps them develop confidence and motivation, as well as creates good habits that lead to completing tasks at a quality level (Blatchford et al., 2009).

At the college level, institutions are beginning to designate staff positions with a primary responsibility to provide professional support for students facing external factors that impede their academic success and their inability to seek help. Counselors provide the professional support and have played a significant role in helping students adjust to the college culture. Students with mental illness comprise a specific group that benefits from a quality relationship with a counselor. According to O'Keefe (2013), five million students drop out of college each year due to a mental illness. Recent research has linked interactions with mental health counselors to improved student outcomes, including academic performance (Castonguay, 2011). From an institutional standpoint, Osberg (2004) determined a counselor can nullify his or her pay by retaining three students at risk of dropping out. Students typically view the role of a counselor as someone who wants to help others and is in a natural position to develop quality relationships (Osberg, 2004). Students also consider other individuals in roles similar to the counselor position as helping and caring roles.

Many students involved in athletics make a natural connection with their coaches. Often, student-athletes indicate a coach as the most significant figure who provides guidance in their

decisions impacting academic success (Jowett, 2009; Smoll & Smith, 1989; Stuntz & Spearance, 2007). Before an athlete steps foot on campus, a coach typically has had numerous interactions with the student and understands various aspects of his or her life including: family, academics, and financial background. Coaches also have a vested interest in a player's academic success as student/athletes must maintain a minimum grade point average in order to compete in athletics (Frank, 2014). The relationship can strengthen over time as a coach typically spends 20 hours per week with practices throughout regular season and a few hours per week during off season.

With the focus on developing relationships with students, learning communities offer an opportunity for student affairs personnel to work collaboratively with faculty. Working together forms a strong bond as each group becomes familiar with the goals and perspectives of others (Astin, 1985; Pascarella & Terenzini, 1991; Tinto, 1998). The design embeds intentionality to create a support group for students that involves peers, faculty, and staff, allowing students to benefit from what each group has to offer. In some cases, the learning communities center on disciplinary themes and can encompass the students' entire class schedule (Jamelske, 2009). Students involved in learning communities have significantly better-developed relationships with others than students who live off campus (Pike et al., 1997), and exhibit higher retention and graduation rates (Zhao & Kuh, 2004).

**Issues.** Evidence from studies have indicated that staff feel their academic colleagues significantly undervalue their contribution to universities and the student learning experience (Small, 2008). The skills and expertise of staff are often overlooked by faculty as playing an integral role in the academic success of a student (Tinto, 1998). This perception creates division in a time when each constituent's responsibilities should be valued; positive collaboration is a key element that leads to student success (Tinto, 1998).

Whether universities design programs that target the development of quality relationships or simply allow these relationships to form naturally, university personnel face the challenge of identifying suitable and willing adult role models. A study conducted by Jacobi (1989) found two-thirds of undergraduate students reported difficulty in finding an adult role model during their college years. Institutions must take the vital step of communicating to students which university personnel are qualified and able to invest the necessary time to meet the student's needs in order to encourage the formation of positive relationships with staff.

Staff can have concerns that negatively affect student learning, in terms of interference with ownership and responsibility, as well as separation from classmates (Giancreco, Edelman, Luiselli, & MacFarland, 1997). A fine line exists between allowing students to handle ups and downs of independence on their own, and providing necessary support and guidance to protect them from obstacles that may interfere with their success.

### **Summary**

Weir and Okun (1989) suggest the amount of contact a student has with peers, faculty, staff, and administrators positively associates with academic success and persistence. The relationships one has during the college years fill an important developmental role in the lives of students (Carger, 1996; Lasley, 1996; Tuckman, 1996). Indeed, students making their initial transition to college likely need varying levels of support. These support systems look differently for each student but all include varying levels of high quality relationships formed with peers, faculty, or staff. Empirical evidence suggests that engagement in higher education predicts academic success (Astin, 1984). Such engagement with others facilitates quality relationships that often mirror the workplace. Workers who had at least one friend within the workplace showed increases in effort and productivity (Bandiera, Barankay, & Rasul, 2010). The research

implies that a student benefits from relationships formed with faculty, staff, and high-achieving students. Formal mentoring programs that focus on developing quality relationships have a direct correlation to retention (Sharkey et al., 1987).

## **CHAPTER 3**

### **METHODOLOGY**

Decisions made in the development of scholarly research stem from the way a researcher views the world around him and, in turn, impacts the way the researcher poses questions and seeks answers (Creswell, 2009). This study targets a single institution of higher education with the aim of identifying student characteristics and relationships that predict retention at a small private liberal arts university. Such knowledge impacts the administrative level of an institution, providing data on how to best allocate monetary resources and target programming efforts.

#### **Research Design**

Theories provide a framework for thinking about interrelationships of constructs (Mertens, 2010) and inform the methodology that will follow (Crotty, 1998). An objective epistemology and post-positivistic theoretical perspective underpins this study, using a quantitative approach. An epistemological study originates from the belief there is but “one reality; knowable within a specified level of probability” (Creswell, 2009, p. 13). According to Crotty (1998), objectivism allows the researcher to operate from the framework that knowledge exists “independently of consciousness and experience” (p. 5). A post-positivist perspective offers assurance of unambiguous and accurate knowledge of the world when the researcher analyzes and interprets the data (Crotty, 1998).

As Creswell (2009) explains, researchers using a post-positivist inquiry recognize that they cannot be sure about claims to knowledge when studying the behavior and actions of humans. Since this study relied upon the perceptions of students’ experiences that impact student engagement according to the NSSE, the data were limited to students’ understanding and interpretation of the survey questions and their individual experiences. The intentions of a

researcher with a post-positivism approach attempts to better understand the phenomena by quantifying the data and remaining objective.

Although the perceptions of college students cannot be claimed as absolute truths, the rationale for a post-positivism approach was appropriate in this study. According to Creswell (2009), a theoretical framework grounded with a post-positivist perspective is based on sound scientific method. Scientific research aims to produce results from measurable variables, with guidelines that ensure reliability. To avoid researcher influence, intentional effort was placed on the use of a well-constructed survey instrument and statistical analysis conducted blindly—names were not attached to the data examined.

### **Methodological Approach**

Common in post-positivist research, this study employed a survey research methodological approach. Fowler (2009) suggest “surveys are designed to produce statistics about a target population” (p. 11), so that inferences can be made about a characteristic, attitude, or behavior (Babbie, 1990). Survey methodology sets out to minimize and measure error in research. With that in mind, Fowler (2009) identifies a good sample survey consists of three methodologies including sampling, designing questions, and data collection.

When considering sampling, Fowler (2009) recommends the following:

- The decision to use a probability sample
- The respondents in the sample
- The size of the sample
- The design of the sample
- The accuracy of the data collected

When selecting the design of the questions, the use of previous literature helps in forming worthy, valid, reliable questions (Fowler, 2009). Once questions are designed, Fowler (2009) notes the significance of how data are collected because the mode of collection can impact data quality. Both NSSE and the participating institution administering the survey took these considerations into account.

By examining collected data between identified variables, the researcher was able to provide an explanation (Fraenkel & Wallen, 2009), bringing greater understanding to a topic that could lead to informed decisions. The goal of this study was to collect information from freshmen and senior college students to determine predictors of retention and graduation.

### **Sample and Participants**

The setting for this study took place at a higher education institution in the central United States classified by the Carnegie system as a small four-year liberal arts university. Approximately 1,700 full-time undergraduate students attend, with 44% living on campus. Students attending this institution have an average high school grade point average of 3.13 and an average American College Testing (ACT) composite score of 20.6. Approximately 54% of the student population classifies as first generation, defined as students whose parents have no college experience.

The participants and data collected were from an existing dataset from the 2012 administration of the National Survey of Student Engagement (NSSE). The intended population for this study concentrated on current freshmen and senior students enrolled at the institution in which the study was situated. All students, classified as a freshman or senior, were invited to participate by an email containing a link to the survey. Students also received a paper invitation to participate, a hard copy of the survey, and the option of completing a Web version of the

survey. Prior to the survey, all participants completed a consent form that satisfied the standards of the Institutional Review Board (IRB) at the participating institution.

The participants ( $n = 396$ ), approximately 30% freshmen and 70% seniors, consisted of randomly sampled full-time students who completed the NSSE at the end of the 2011-2012 academic school year. Full-time students were identified as those enrolled in a minimum of twelve credits each semester.

Of the 396 participants, 37.5% identified as male and 62.5% identified as female. The majority of the respondents identified as white (86.6%), and according to the United States Census Bureau (2012), the minority population in the sample was similar to the representation of the state in which the institution is based (excluded here for confidentiality reasons). The freshmen in the sample retained at 66.7% while institutional data reported 62.4% of the students in the overall class retained. The graduation rate for the seniors in the sample was 93.5% compared to the 97% of the overall senior class at the institution.

### **Research Questions**

The purpose of this quantitative study was to determine the extent to which factors can predict college retention and graduation. Based on the purpose of this study, the following research questions were addressed:

1. What are the demographic characteristics of students who participated in the 2012 NSSE at a small private institution located in the central United States?
2. To what extent is there a difference between freshmen and senior, male and female, and white and non-white students' views of relationships with a) peers, b) faculty, and c) staff?



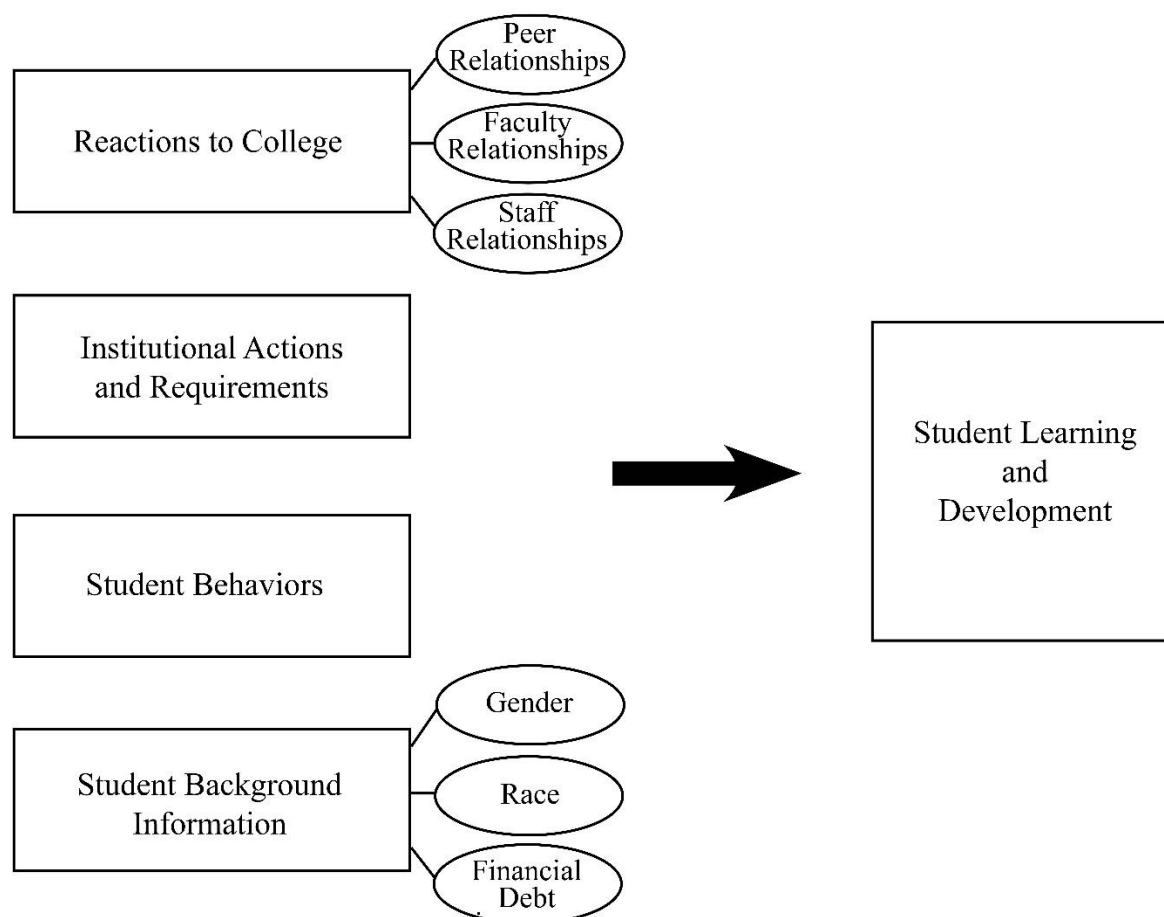
3. To what extent do the demographic variables (race and gender), financial variable (financial debt), and relationship variables (relationships with peers, relationships with faculty, and relationships with staff) predict freshmen retention?
4. To what extent do the demographic variables (race and gender), financial variable (financial debt), and relationship variables (relationships with peers, relationships with faculty, and relationships with staff) predict graduation with a degree from senior undergraduate students?

### **Data Collection and Survey Instrument**

The use of surveys is an appropriate data collection method in post-positivist studies when the goal is to explore relationships between responses (Fraenkel & Wallen, 2009). The current study employed a quantitative methodology that used an existing dataset obtained from the 2012 National Survey of Student Engagement (NSSE). The NSSE, a credible data collection instrument, provides quantitative data on the time and effort students devote to educationally purposeful activities and the students' perceptions on the quality of other aspects of their college experience. Selecting a reputable existing dataset previously approved by Institutional Review Boards and dependable for other researchers was paramount to the reliability and validity of this study. Minimizing the data collection process allowed additional time and focus on interpreting the findings and formalizing conclusions that might improve retention efforts.

The analyses were conducted using SPSS software and data obtained from the 2012 NSSE survey at the selected institution, consisting of 42 questions, and taking 10-15 minutes to complete. The survey breaks down into four distinct sections. One set of questions seeks to obtain student reactions to aspects of the college environment associated with achievement, satisfaction, and persistence, including the quality of relations among various groups on campus

such as students, faculty, and staff (Astin, 1993; Pascarella & Terenzini, 2005; Tinto, 1993). A second set of questions pertains to institutional actions and requirements, such as the amount of reading and writing time spent completing coursework. The majority of the survey questions address a third section that refers specifically to student engagement behaviors tied to positive learning and personal development outcomes (Kuh, 2003; Pascarella & Terezini, 2005). The fourth section of the NSSE gathers descriptive data, providing helpful demographic information such as gender and race. The majority of the responses are constructed based upon a Likert-scale instrument, with a higher number representing a more positive response. Quality relationships were determined by NSSE responses in which students indicate on a scale from 1 to 7 the level of quality relationships developed for each group: peers, faculty, and staff. The amount of financial debt each student has accumulated is relevant to this study but not originally captured in the NSSE. The participating institution attached the financial debt of each student to the NSSE data, providing part of the student background information. Figure 3.1 provides a visual representation of the variables used in this study linked to the areas NSSE collects information on that leads to student learning and development.



*Figure 3.1.* Information Collected in the NSSE Questionnaire

According to Kuh et al. (2001), the NSSE was designed with the intentions to satisfy the criterion that promotes validity in self-reports: (1) the information requested is known to the respondents; (2) the questions are phrased clearly and unambiguously; (3) the questions refer to recent activities; (4) the respondents think the questions merit a serious and thoughtful response; and (5) answering the questions does not threaten, embarrass, or violate the privacy of the respondent or encourage the respondent to respond in a socially desirable ways. The NSSE deliberately selects items from other quality undergraduate surveys, including the Indiana University's College Student Experiences Questionnaire and UCLA's Cooperative Institutional Research Program. To ensure content validity, the design team devoted considerable time to

make certain items on the survey were clearly worded and well-defined (Kuh, 2003). The psychometric properties of the NSSE have been extensively tested and approved (Kuh, 2003). A large scale series of focus groups were conducted to further confirm the validity and reliability of the NSSE instrument (Ouimet, Carini, Kuh, & Brunnage, 2001). A NSSE team regularly conducts scale reliability tests and adds and omits items to improve reliability. According to NSSE (2010), the psychometric portfolio includes studies of reliability, validity, and other quality indicators, all more closely described in Table 3.1.

Table 3.1

*Description of the NSSE Psychometric Portfolio*

Validity	Reliability	Other Quality Indicators
Concurrent	Equivalence	Data Quality
Consequential	Internal Consistency	Item Bias
Construct	Temporal Stability	Measurement Error
Content		Mode Analysis
Known Groups		Nonresponse Effect/Bias
Predictive		Sampling Error
Response Process		Self-Selection Bias
		Social Desirability

Just as validity of the instrument is valuable in research, so too is protecting the data and the participants involved. To ensure confidentiality, names and any other possible identification coding that could be linked to an individual student were deleted once the financial debt and the retention/graduation data were linked to each participant. To further protect the participants, the researcher chose not to list the name of the institution in which the data were collected, and all data were secured on a password protected computer. All data were deleted upon completion of the research.

## **Variables**

When reviewing the data collected from the NSSE survey, many variables fell into the category of student engagement, in particular relationships. The independent variables were chosen based on previous research present in the literature review and an institution's ability to use the data when determining appropriate programs and activities. If any of these variables are found to be statistically significant predictors, institutions can use this information as continued efforts are placed on improving retention and graduation.

### **Independent Variables**

**Gender.** Gender was a dichotomous variable and data were collected as participants were asked "What is your sex?" with options of selecting male (coded = 0) or female (coded = 1). Gender was used in the analysis to answer research questions one, three, and four.

**Race.** Race and ethnicity variables are prevalent in literature related to retention (Peltier et al., 1999), and often conflated into one variable. To avoid confusion, census data reports only race, thus this study chose to use race and does not use the terms interchangeably. Demographic data were measured through participant responses on the NSSE survey. Race was measured by self-identification from the following options: American Indian or Native American, Asian or Pacific Islander, Black or African American, white (non-Hispanic), Mexican or Mexican American, Puerto Rican, Other Hispanic or Latino, Multiracial, and Other. Because a small representation of specific races exists, the variable was recoded as a dichotomous variable, non-white (coded = 0) and white (coded = 1). Race was used in the analysis to answer research questions one, three, and four.

**Academic status.** A survey item exists that asks participants for their student classification, freshmen, sophomore, junior, or senior. A dichotomous variable was created to

only include students identified as freshmen (coded = 0) or seniors (coded = 1). Academic status was used to determine whether findings from freshmen, who are in their first academic school year, are consistent with seniors, who have experienced more time in college. Academic status was used in the analysis process to answer research questions two, three, and four.

**Financial debt.** The financial debt variable identified the financial amount each student owed to the institution. These data were provided by the university and attached to the participant's NSSE data. Upon graduating, the average student in the United States will incur \$33,000 in college debt (Izzo, 2014). The institution only has access to the financial amount owed to the institution. Generally, students maximize institutional loans prior to accepting loans from private vendors so the amount represented in this continuous variable most accurately represents the financial debt of a student. Financial debt was used in the analysis to answer research questions three and four.

**Peers.** Participants were instructed to mark the box that best represents the quality of their relationships with certain groups of people at their institution. The NSSE survey asked participants to rate their relationships with other students. The item was measured on a seven point Likert-type scale with 1 = "unfriendly, unsupportive, and sense of alienation" to 7 = "friendly, supportive, and sense of belonging." Peers was used in the analysis to answer research questions two, three, and four.

**Faculty.** Participants were instructed to mark the box that best represents the quality of their relationships with certain groups of people at their institution. The NSSE survey asked participants to rate their relationships with faculty members. The item was measured on a seven point Likert-type scale with 1 = "unavailable, unhelpful, and unsympathetic" to 7 = "available,

helpful, and sympathetic.” Faculty was used in the analysis to answer research questions two, three, and four.

**Staff.** Participants were instructed to mark the box that best represents the quality of their relationships with certain groups of people at their institution. The NSSE survey asked participants to rate their relationships with administrative personnel and offices. The item was measured on a seven point Likert-type scale with 1 = “unhelpful, inconsiderate, and rigid” to 7 = “helpful, considerate, and flexible.” Staff became useful in the analysis to answer research questions two, three, and four.

### **Dependent Variables**

The following section provides an explanation of how retention and graduation were measured in terms of the academic success of college students.

**Retention and graduation.** Often, institutions define student or academic success in terms of retention and graduation rates. To use the most recent data available, retention and graduation data were needed to measure the success of the participants. A graduation variable was considered for students identified as seniors. This became a dichotomous variable: students who had graduated were coded as 1, and students who had not graduated were coded as 0. A retention variable was used to measure academic success for freshmen who completed the survey, as many would still be in their fourth year of studies at the time the data were provided. This became a dichotomous variable: students who were graduated or currently enrolled at the institution were coded as 1, and all students no longer enrolled at the institution were coded as 0. Graduation and retention data were obtained by the university and attached to the NSSE data. This became useful in the analysis to answer research questions three and four. The variables used in this study are displayed in Table 3.2.

Table 3.2

*List of Variables Used for Research Questions*

Variable	Measurement	Responses
Gender	Dichotomous	Female (1), Male (0)
Race	Dichotomous	White (1), Non-white (0)
Academic Status	Dichotomous	Senior (1), Freshmen (0)
Financial Debt	Continuous	\$0 – \$101,600
Peers	Ordinal	1, 2, 3, 4, 5, 6, 7
Faculty	Ordinal	1, 2, 3, 4, 5, 6, 7
Staff	Ordinal	1, 2, 3, 4, 5, 6, 7
Retention*	Dichotomous	Retained (1), Did not retain (0)
Graduation*	Dichotomous	Graduated (1), Did not graduate (0)

\*Denotes the dependent variable.

### Data Analysis

Data were entered into the Statistical Package for the Social Sciences (SPSS) v.22. The use of this software allowed identifying missing cases, removing outliers, and checking for normality. Missing data did exist in this dataset but was not manipulated in any way by the researcher. Those participants with missing data were removed from the study because according to Leech, Barrett, and Morgan (2011), the dataset had a sufficient number of participants who responded to the selected questions.

### Descriptive Analysis

Once variables and data were properly coded, the descriptive analysis process provided means, standard deviations, minimums, maximums, and frequencies for each independent and dependent variable. Descriptive statistics were used to answer research question #1: What are the demographic characteristics of students who participated in the 2012 NSSE at a small private institution located in the central United States? Tabachnick and Fidell (2007) defined descriptive statistics as characterizing samples in terms of variables or combination of variables that aid in describing and making inferences about a dataset.



## Independent Samples *t*-tests

Three independent samples *t*-tests were conducted to answer analysis research question #2: To what extent is there a difference between freshmen and senior, male and female, and white and non-white students' views of relationships with a) peers, b) faculty, and c) staff? These tests were used to compare two independent groups on a normal dependent variable (Leech et al., 2011). The nine specific independent samples *t*-tests addressed the following questions:

- a) To what extent is there a statistically significant difference between freshmen and senior students' view on quality relationships formed with peers?
- b) To what extent is there a statistically significant difference between freshmen and senior students' view on quality relationships formed with faculty?
- c) To what extent is there a statistically significant difference between freshmen and senior students' view on quality relationships formed with staff and administration?
- d) To what extent is there a statistically significant difference between male and female students' view on quality relationships formed with peers?
- e) To what extent is there a statistically significant difference between male and female students' view on quality relationships formed with faculty?
- f) To what extent is there a statistically significant difference between male and female students' view on quality relationships formed with staff and administration?
- g) To what extent is there a statistically significant difference between white and non-white students' view on quality relationships formed with peers?
- h) To what extent is there a statistically significant difference between white and non-white students' view on quality relationships formed with faculty?

- i) To what extent is there a statistically significant difference between white and non-white students' view on quality relationships formed with staff and administration?

## **Correlations**

Correlations were conducted on the independent variables to determine the extent to which the independent and dependent variables were linearly related. Necessary when conducting correlation analysis, the data were first screened to ensure two assumptions noted by Green and Salkind (2011) were met: "Assumption 1: The Variables Are Bivariately Normally Distributed; Assumption 2: The Cases Represent a Random Sample from the Population and the Scores on Variables for One Case Are Independent of Scores on These Variables for Other Cases" (p. 258). A correlation matrix was developed which provided confirmation that multicollinearity was not present through visual inspection. Although correlation values exist between -1 and +1, multicollinearity occurs when variables are so closely related they effectively measure the same concept and are noted by a correlation value less than -.90 or greater than .90 (Tabachnick & Fidell, 2007). A positive value indicates a positive correlation while a negative value signifies an inverse relationship. The Pearson correlation coefficient measures the effect size of a variable when both variables are approximately normally distributed, while the Bonferonni approach controls for Type 1 error in statistical significance and is calculated by dividing the generally accepted significance level of .05 by the number of computed correlations (Leech et al., 2011).

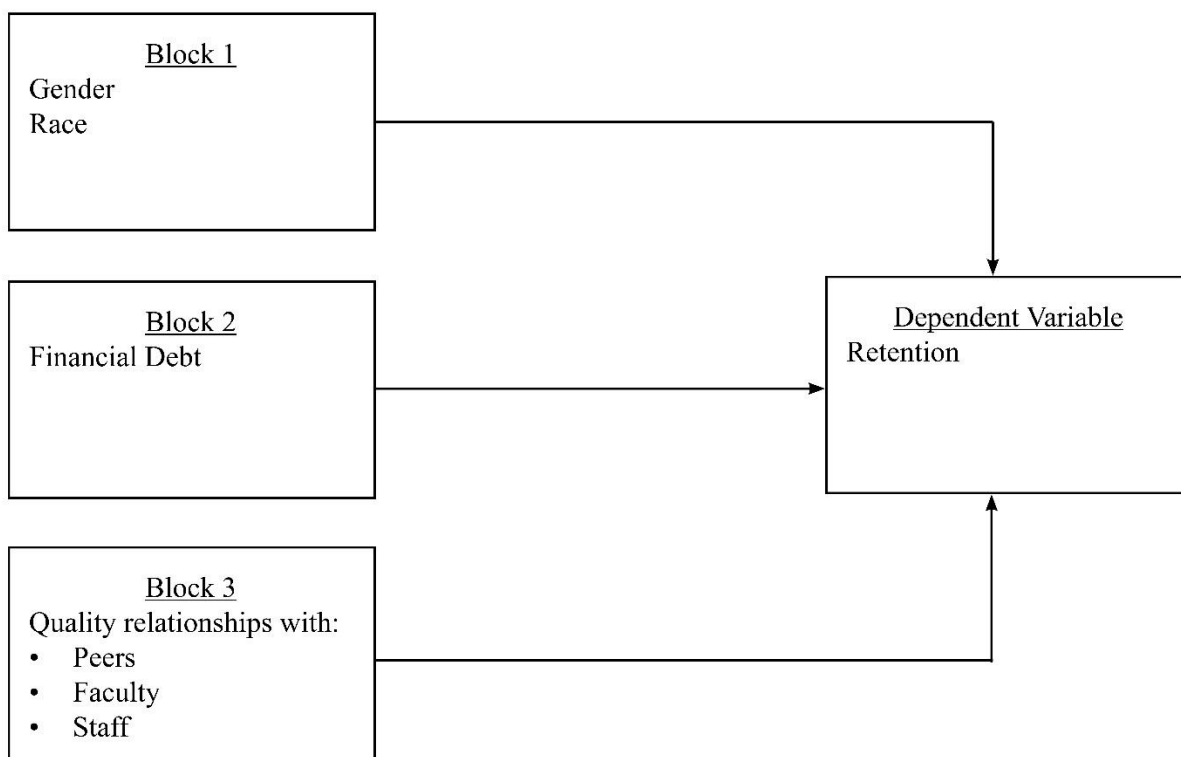
## **Multiple Regression**

Multiple regression analyses are versatile and powerful statistical techniques that enable the researcher to examine the relationship between a dependent variable and multiple independent variables (Fox, 1997; Tabachnick & Fidell, 2007). Multiple regression applied to a

dataset allows several independent variables to be correlated with one another and with the dependent variable. Since the researcher was able to determine the order (Tabachnick & Fidell, 2007), each set of independent variables was assessed at its point of entry. Hierarchical, also known as sequential, multiple regression was used to address research question #3 and #4:

- To what extent do race, gender, financial debt, and relationships with peers, faculty and staff predict freshmen retention?
- To what extent do race, gender, financial debt, and relationships with peers, faculty and staff predict graduation with a degree from senior undergraduate students?

Multiple regression analysis was purposeful in determining whether certain demographic, financial, and quality relationship variables predict college retention. Predictor variables were entered into the hierarchical regression equation in three variable blocks with the significance level established at  $p < .05$ . The blocks were determined based on the level of control an individual or an institution has on each variable. The first block of variables were based on characteristics that institutions have no control over. These variables are related to demographics: gender and race. The total amount of financial debt owed to the institution that each student accumulates represented the second block. The third block referred to the quality level of relationships students formed with the following groups: peers, faculty, and staff. Figure 3.2 provides a visual depiction of the regression model respective to the dependent variable.



*Figure 3.2. Visual Model of Hierarchical Regression Analyses*

The regression analysis becomes a valuable process when a researcher attempts to predict the value of one variable based on the value of another (Tabachnick & Fidell, 2007). Regression is based on a linear relationship and the basic model equation is expressed as:

$$Y=bX+a$$

where Y = the predicted outcome (dependent variable), b = the unstandardized regression coefficient, X = the predictor (independent variable), and a = the y-intercept (constant). In the case of multiple independent variables, the formula is adjusted to include additional terms:

$$Y=bX_1+bX_2+\dots a$$

where  $X_1$  is the value of the first predictor variable and  $X_2$  is the value of the second predictor variable. When calculating a sufficient sample size, Tabachnick and Fidell (2007) suggest using the following equation connected to the number of predictor variables present:

$$8m+50=N$$

where  $m$  = the number of predictors (independent variables) and  $N$  = the minimum sample size.

In this study, the maximum number of predictor variables used in a regression model is six.

Replacing  $m$  with the value six in the above equation and conducting the calculation produces a minimum sample size of  $n = 98$ . This study had a sample size of  $n = 342$ , satisfying Tabachnick and Fidell's (2007) minimum sample size guidelines.

When a dichotomous dependent variable is present, conflicting research exists on whether multiple regression or logistic regression is preferred. Supporters of multiple regression have proven it mathematically equivalent to logistic regression when the dependent variable is dichotomous (Cohen & Cohen, 1975; Pedhazur, 1982; Tatsuoka, 1971). Overall, Thayer (1986) concludes it unlikely that the two methods will produce markedly different results unless a large proportion of observations emerges whose x-values lie in regions of the factor space with linear logistic response probabilities near zero or one. Historically, the participating institution yields similar retention rates as other private institutions offering bachelor's and master's degree with 18-24 average American College Testing scores. The average freshmen to sophomore retention rate is 71% and the retention rate until graduation is 53%.

To address the research questions for this study, data methods included descriptive and inferential analyses. Various variables have been identified to seek answers to the research questions. Summarization of the research questions are described in Table 3.3, including the variables and method of analysis for each.

Table 3.3

*Research Questions, Method of Analysis, and Variables*

Research question	Method of analysis	Independent variables	Dependent variables
1. What are the demographic characteristics of students who participated in the 2012 NSSE at a small private institution located in the central United States?	Descriptive	<ul style="list-style-type: none"> <li>• Gender</li> <li>• Race</li> </ul>	
2. To what extent is there a difference between freshmen and senior, male and female, and white and non-white students' views of relationships with a) peers, b) faculty, and c) staff?	Independent Samples <i>t</i> -test	<ul style="list-style-type: none"> <li>• Academic Status (freshmen and seniors)</li> <li>• Gender (male and females)</li> <li>• Race (white and non-white)</li> </ul>	<ul style="list-style-type: none"> <li>• Quality Relationships with Peers</li> <li>• Quality Relationships with Faculty</li> <li>• Quality Relationships with Staff</li> </ul>
3. To what extent do the demographic variables (race and gender), financial variable (financial debt), and relationship variables (relationships with peers, relationships with faculty, and relationships with staff) predict freshmen retention?	Hierarchical Regression	<ul style="list-style-type: none"> <li>• Gender (male and female)</li> <li>• Race (white and non-white)</li> <li>• Financial Debt</li> <li>• Quality Relationships with Peers</li> <li>• Quality Relationships with Faculty</li> <li>• Quality Relationships with Staff</li> </ul>	<ul style="list-style-type: none"> <li>• Retention</li> </ul>
4. To what extent do demographic variables (race and gender), financial variable (financial debt), and relationship variables (relationships with peers, faculty and staff) predict graduation with a degree from senior undergraduate students?	Hierarchical Regression	<ul style="list-style-type: none"> <li>• Gender (male and female)</li> <li>• Race (white and non-white)</li> <li>• Financial Debt</li> <li>• Quality Relationships with Peers</li> <li>• Quality Relationships with Faculty</li> <li>• Quality Relationships with Staff</li> </ul>	<ul style="list-style-type: none"> <li>• Graduation</li> </ul>

### **Limitations and Delimitations**

So that the study remains transparent, limitations are communicated and acknowledged. The NSSE limits the ability to measure relationships and relies on students' perceptions. As with any survey involving a Likert-scale, the data were based on whether the responses accurately depicted the behaviors or perceptions the survey designers intended. According to Porter (2011), questions arise in regard to the validity of the results any time data were self-reported. A participant may inflate certain aspects of his or her behavior or performance (Kuh, 2001). Two participants may have experienced similar engagement activities but their responses may be completely different. Participants may also experience the Hawthorne effect in which the responses of an individual do not accurately depict beliefs or occurrences, but rather how one thinks responses should be according to society or the researcher (Fraenkel & Wallen, 2009).

Although many factors contribute to whether a student retains or withdraws from an institution, the number of variables were limited based on identified leading predictors determined by the researcher. Greater predicting factors of retention and graduation that this study did not explore may exist.

This study was delimited to one private liberal arts institution located in the central United States, using data collected at the end of the 2011-2012 academic school year; therefore results reflect solely from one point in time and may not be generalizable to previous or future years, as well as other institutions where student-faculty ratios may not be as low. Also, only the leading reason students leave an institution, financial debt, and the demographic characteristics of gender and race were considered as barriers to forming quality relationships; no other factors were explored.

### **Summary**

The purpose of the study and the research questions were summarized in this chapter. The research design provided the theoretical framework upon which this study was grounded. This chapter also discussed the demographic characteristics of the sample, as well as the data collection process and the variables involved in the study. The method of analysis to answer each research question was described in detail. Finally for transparency purposes, the limitations and delimitations were mentioned.



## **CHAPTER 4**

### **RESULTS**

The purpose of this quantitative study was to determine whether students' demographics, financial debt, and quality relationships can predict retention and graduation using the theoretical framework of student engagement leading to positive learning outcomes (Kuh, 2003; Pascarella & Terenzini, 2005). This study was informed by using the theories of Bowlby (1969), Tinto (1975), and Vygotsky (1978) which are linked to social connectedness as the conceptual framework and a review of the literature on quality relationships of college students and other identified variables as having potential influence on retention and graduation.

This chapter provides an overview of the results from the data analyses and addresses the four research questions. The following research questions guided this study:

1. What are the demographic characteristics of students who participated in the 2012 NSSE at a small private institution located in the central United States?
2. To what extent is there a difference between freshmen and senior, male and female, and white and non-white students' views of relationships with a) peers, b) faculty, and c) staff?
3. To what extent do the demographic variables (race and gender), financial variable (financial debt), and relationship variables (relationships with peers, relationships with faculty, and relationships with staff) predict freshmen retention?
4. To what extent do the demographic variables (race and gender), financial variable (financial debt), and relationship variables (relationships with peers, relationships with faculty, and relationships with staff) predict graduation with a degree for senior undergraduate students?

This chapter includes six sections: Data Screening and Assumptions of Normality, Frequency and Descriptive Statistics, Independent Samples *t*-tests, Correlations, Multiple Regression, Answers to the Research Questions, and Summary. The first section describes the procedures used to screen the data and ensure assumptions of data normality were met in order to conduct valid data analyses. The second section reveals the descriptive statistics conducted on all demographic, independent, and dependent variables. The third section reports the results for the independent samples *t*-test conducted to answer research question two. The fourth section provides the results from the hierarchical (sequential) regression analyses conducted in response to research questions three and four. The fifth uses the results from the analyses to answer the research questions, and the final section summarizes the results from the prior sections

### **Data Screening and Assumptions of Normality**

Prior to descriptive and inferential analyses taking place, the data were screened for outliers and missing values. When comparing the number of respondents to the minimum sample size formula provided by Leech et al. (2011),  $8m+50=N$ , where  $m$  = the number of predictors (independent variables) and  $N$  = the minimum sample size, the dataset had a sufficient number of participants who responded to the selected questions for regression analysis, allowing cases containing missing data to be deleted. Results of data screening revealed that of 470 original cases, 74 necessitated deletion for missing data, leaving 396 remaining cases. Further screening was conducted to ensure the data were normally distributed, a precursor to conducting inferential statistics, including independent samples *t*-tests and multiple regression (Tabachnick & Fidell, 2007).

The two components of normality assessed on variables are skewness and kurtosis (Kline, 2011). The skewness of a variable describes the extent to which a distribution of values

deviates from symmetry around the mean. A zero value signifies a symmetric distribution, while a positive skewness indicates a greater number of smaller values. A kurtosis value near zero signifies a shape close to normal, with a positive number indicating a flatter than normal curve. A skewness and kurtosis value of + or – 1 is considered very good, but according to Kline (2011), + or – 3 is acceptable. Results of the variables in this study are reported in Table 4.1, revealing that all variables fulfilled the assumption of data normality according to Kline for the independent samples *t*-test and multiple regression.

Table 4.1

*Assessment of Normality for Variables in the Study (n = 396)*

Variables	Skew	SE of Skew	Kurtosis	SE of Kurtosis
Gender	-.638	.123	-1.601	.245
Race	-2.159	.123	2.675	.245
Financial Debt	.973	.132	.964	.263
Relationships with Peers	-1.424	.123	2.390	.245
Relationships with Faculty	-.598	.123	-.355	.245
Relationships with Staff <sup>d</sup>	-.704	.123	-.136	.245
Retention*	-2.192	.123	2.817	.245
Graduation*	-.734	.123	-1.468	.245

\*Denotes the dependent variable

### Frequencies and Descriptive Statistics

The demographic frequencies were descriptive statistics used to provide the characteristics of the sample. The revised academic status variable was a recoded variable taken from question #92 of the 2012 NSSE survey (class), which requests students to report their current classification in college. The revised class variable was dichotomous with a numerical value that identifies whether a student was a freshman or senior. This contributed to filtering the data in order to respond to research questions 2, 3, and 4. Similar in nature, the race variable was a recoded variable taken from question #91 of the 2012 NSSE (race05), which requests students to report his or her racial identification. With such a small representation of minority students,

the revised race variable was dichotomous with a numerical value representing whether a student was white or non-white. The descriptive statistics found in Table 4.2 provides the demographic characteristics of gender and race, along with the other independent and dependent variables present in this study. To address the first research question, demographic characteristics of college students who responded to the 2012 NSSE survey were examined.

Table 4.2

*Descriptive Statistics for Independent and Dependent Variables (n = 396)*

Variables	N	M	Min	Max	SD
Academic Status (1 =senior)	396	.70	0	1	.45
Gender (1=female)	396	.65	0	1	.47
Race (1 = white)	396	.87	0	1	.30
Financial Debt	396	30,621.75	0	101,600	18,125.22
Relationships with Peers <sup>a</sup>	396	5.80	1	7	1.23
Relationships with Faculty <sup>b</sup>	396	5.11	1	7	1.19
Relationships with Staff <sup>c</sup>	396	4.04	1	7	1.50
Retention* (1 = retained)	396	.87	0	1	.34
Graduated* (1 = graduated)	396	.67	0	1	.47

\*Denotes the dependent variable

<sup>a</sup>Scale: 1 = Unfriendly, unsupportive, sense of alienation – 7 = Friendly, supportive, sense of belonging

<sup>b</sup>Scale 1 = Unavailable, unhelpful, unsympathetic – 7 = Available, helpful, sympathetic

<sup>c</sup>Scale: 1 = Unhelpful, inconsiderate, rigid – 7 = helpful, considerate, flexible

The total number of respondents for this research sample was 396 students. The sample was comprised of 70% ( $n = 279$ ) seniors and 30% ( $n = 117$ ) freshmen. Much like academic status, the participants were similarly distributed between males and females. Of those respondents, 65.2% ( $n = 258$ ) were identified as females and 37.5% ( $n = 134$ ) were identified as males, or not females. The most prevalent race was white, comprising of 86.6% ( $n = 343$ ) of the entire sample while non-white comprised of 13.4% ( $n = 53$ ) of the entire sample. The data revealed 86.9% ( $n = 344$ ) of the students were retained, meaning they have graduated or are currently enrolled at the institution. The graduation data indicated 67.2% ( $n = 266$ ) of the sample had graduated.

## Correlations

This study examined the relationship between variables using the Pearson correlation coefficients. It must be noted that a correlation addresses a level of association and not cause (Salkind, 2012). Pearson correlations reflect the strength of a linear relationship between two variables (Vogt & Johnson, 2011) that are computed with results ranging from -1.0 to +1.0. Any bivariate correlation above .90 is considered to be multicollinear, variables that in effect measure the same concept (Tabachnick & Fidell, 2007). “For behavioral sciences, correlation coefficients of .10, .30, and .50 irrespective of sign, are, by convention, interpreted as small, medium, and large coefficients, respectively” (Green & Salkind, 2011, p. 259).

Pearson correlation coefficients were computed among each of the independent and dependent variables: Gender, Race, Financial Debt, Relationships with Peers, Relationships with Faculty, Relationships with Staff, Retention, and Graduation, resulting in 8 correlation coefficients represented in Table 4.3. To avoid the risk of Type I error in determining statistical significance when computing multiple correlations, the Bonferonni approach was used to determine the new level for statistical significance (Leech et al., 2011). The Bonferroni approach involves dividing a generally accepted alpha level (.05) by the number of correlations (28), which results in a new alpha level (.002). In this study, correlations required a *p* value of .002 or lower to be considered significant. Using .002 as the revised and conservative significance level, 2 of the 28 correlations were deemed significant. The two significant correlations are noted with two asterisks (\*\*) in Table 4.3.

Table 4.3

*Correlation Matrix – Independent and Dependent Variables (N = 396)*

	1	2	3	4	5	6	7
1 Gender	---						
2 Race	.071	---					
3 Financial Debt	.086	.050	---				
4 Relationships w/ Peers	.054	.090	.021	---			
5 Relationships w/ Faculty	.086	.020	.003	.582**	---		
6 Relationships w/ Staff	.125*	-.008	.091	.036	.008	---	
7 Retention	.077	.001	.268**	.038	.034	.043	---
8 Graduation	.064	.025	.094	.114*	.060	.019	.556**

Note: \*  $p < .05$

Note: \*\*  $p < .002$  Bonferonni adjustment for multiple correlations to minimize chances of Type 1 error

Using the Green and Salkind (2011) interpretation of correlation coefficient size, of the three statistically significant correlations were present, one having a moderate (medium) relationship and two considered to have a high (large) relationship. The remaining 25 correlations were not statistically significant and had correlations coefficients approximately .10 or less. Each statistically significant correlation of at least .20 is described below, based on the strength of the coefficient size. In each bivariate correlation, positive results indicate one variable increases as the other variable increases.

Using the Bonferroni adjustment for statistical significance, three correlations were identified as significant. Financial Debt and Retention,  $r(396) = .268$ ,  $p < .001$ , indicating a moderately strong positive relationship. Specifically, participants possessing higher values in financial debt also retained.

Another statistically significant correlation existed between the Relationships with Peers and Relationships with Faculty,  $r(396) = .582$ ,  $p < .001$ , also a moderately strong positive relationship. Specifically, participants identifying higher values in financial debt also identified higher values in retention.

The final statistically significant correlation occurred between Retention and Graduation,  $r(396) = .556, p < .001$ . The  $p$  value was less than the Bonferroni adjustment (.002), also a moderately strong positive relationship. Participants who retained also graduated.

### **Independent Samples $t$ -tests**

Three independent samples  $t$ -tests were conducted to determine whether there was a statistical difference between freshmen and senior college students and their view towards existing relationships with a) peers, b) faculty, and c) staff.

There are three assumptions that the data must meet prior to conducting an independent samples  $t$ -test (Green & Salkind, 2008):

1. The test variable is normally distributed in each of the two populations.
2. The variances of the normally distributed test variable for the populations are equal.
3. The cases represent a random sample from the population, and the scores on the test variable are independent of each other.

Prior data screening described in the first section of this chapter revealed that assumptions 1 and 3 were met. When conducting the independent samples  $t$ -tests, Levene's test for equality variances was interpreted and indicated that the variances between the samples were equal, thus satisfying assumption 2.

### **Relationships with peers**

An independent samples  $t$ -test was conducted to determine whether there was a statistically significant difference in the perceived quality of relationships developed with peers between freshmen and senior students. The independent samples  $t$ -test  $t(394) = -2.491, p = .013$ , was statistically significant indicating that the mean score for seniors ( $M = 5.87, SD = 1.272$ ) was significantly greater than the mean score for freshmen ( $M = 5.556, SD = 1.163$ ). Specifically,

senior participants rated their relationships with peers higher than freshmen participants. The effect size  $d$ , was .28. The 95% confidence interval ranged from -.609 to -.072 with the value of zero not included in this range also indicating that the difference was statistically significant.

An independent samples  $t$ -test was conducted to determine whether there was a statistically significant difference in the perceived quality of relationships developed with peers between female and male students. The independent samples  $t$ -test  $t(394) = -1.079, p = .281$ , was not statistically significant indicating that the mean score for females ( $M = 5.85, SD = 1.222$ ) was not significantly greater than the mean score for males ( $M = 5.703, SD = 1.298$ ). Specifically, senior participants rated their relationships with peers higher than freshmen participants. The effect size  $d$ , was .11. The 95% confidence interval ranged from -.401 to .117 with the value of zero included in this range also indicating that the difference was not statistically significant.

An independent samples  $t$ -test was conducted to determine whether there was a statistically significant difference in the perceived quality of relationships developed with peers between white and non-white students. The independent samples  $t$ -test  $t(394) = -1.433, p = .157$ , was not statistically significant indicating that the mean score for white students ( $M = 5.84, SD = 1.180$ ) was not significantly greater than the mean score for non-white students ( $M = 5.51, SD = 1.613$ ). The effect size  $d$ , was .26. The 95% confidence interval ranged from -.791 to .131 with the value of zero included in this range also indicating that the difference was not statistically significant.

### **Relationships with faculty**

An independent samples  $t$ -test was conducted to determine whether there was a statistically significant difference in the perceived quality relationships developed with faculty between freshmen and senior students. The independent samples  $t$ -test  $t(394) = -1.332, p = .184$ ,



was not statistically significant indicating that the mean score for seniors ( $M = 5.18$ ,  $SD = .092$ ) was not significantly greater than the mean score for freshmen ( $M = 4.96$ ,  $SD = .133$ ). The effect size  $d$ , was .15. The 95% confidence interval ranged from  $-.550$  to  $.106$  with the value of zero included in this range also indicating that the difference was not statistically significant.

An independent samples  $t$ -test was conducted to determine whether there was a statistically significant difference in the perceived quality of relationships developed with faculty between female and male students. The independent samples  $t$ -test  $t(394) = -1.723$ ,  $p = .086$ , was not statistically significant indicating that the mean score for females ( $M = 5.21$ ,  $SD = 1.472$ ) was not significantly greater than the mean score for males ( $M = 4.93$ ,  $SD = 1.581$ ). The effect size  $d$ , was .18. The 95% confidence interval ranged from  $-.588$  to  $.039$  with the value of zero included in this range also indicating that the difference was not statistically significant.

An independent samples  $t$ -test was conducted to determine whether there was a statistically significant difference in the perceived quality of relationships developed with peers between white and non-white students. The independent samples  $t$ -test  $t(394) = -.392$ ,  $p = .696$ , was not statistically significant indicating that the mean score for white students ( $M = 5.13$ ,  $SD = 1.521$ ) was not significantly greater than the mean score for non-white students ( $M = 5.04$ ,  $SD = 1.480$ ). The effect size  $d$ , was .06. The 95% confidence interval ranged from  $-.528$  to  $.352$  with the value of zero included in this range also indicating that the difference was not statistically significant.

### **Relationships with staff**

An independent samples  $t$ -test was conducted to determine whether there was a statistically significant difference in the perceived quality relationships developed with staff between freshmen and senior students. The independent samples  $t$ -test  $t(394) = .820$ ,  $p = .413$ , was not

statistically significant indicating that the mean score for seniors ( $M = 4.00$ ,  $SD = 1.664$ ) was not significantly greater than the mean score for freshmen ( $M = 4.15$ ,  $SD = 1.470$ ). The effect size  $d$ , was .06. The 95% confidence interval ranged from -.203 to .494 with the value of zero included in this range also indicating that the difference was not statistically significant.

An independent samples  $t$ -test was conducted to determine whether there was a statistically significant difference in the perceived quality of relationships developed with staff between female and male students. The independent samples  $t$ -test  $t(394) = -2.650$ ,  $p = .008$ , was statistically significant indicating that the mean score for females ( $M = 4.19$ ,  $SD = 1.694$ ) was significantly greater than the mean score for males ( $M = 3.768$ ,  $SD = 1.400$ ). The effect size  $d$ , was .26. The 95% confidence interval ranged from -.735 to -.109 with the value of zero not included in this range also indicating that the difference was statistically significant.

An independent samples  $t$ -test was conducted to determine whether there was a statistically significant difference in the perceived quality of relationships developed with peers between white and non-white students. The independent samples  $t$ -test  $t(394) = .158$ ,  $p = .875$ , was not statistically significant indicating that the mean score for non-white students ( $M = 4.08$ ,  $SD = 1.730$ ) was not significantly greater than the mean score for white students ( $M = 4.04$ ,  $SD = 1.592$ ). The effect size  $d$ , was .02. The 95% confidence interval ranged from -.430 to .505 with the value of zero included in this range also indicating that the difference was not statistically significant.

### **Multiple Regression**

A hierarchical regression approach was used to determine whether the independent variables were statistically significant predictors of the dependent variable (Leech et al., 2011). Predictor variables were entered into the hierarchical regression equation in three variable blocks

with the significance level established at  $p < .05$ . The blocks were determined based on the level of control an individual or institution has on the variable. The first block of comprised variables contained predetermined characteristics related to demographics: gender and race. The variable in the second block was considered to have minimal control and reflected the financial debt of each student. The financial debt of a student may be relevant because that factor has been reported as the primary reason students do not retain (Bowen et al., 2009). Focusing on more controllable factors, the third block referred to the quality level of relationships students formed with the following groups: peers, faculty, and staff.

### Retention

Sequential hierarchical regression analysis was conducted on the dependent variable of college retention for freshmen who took the 2012 NSSE to address research question three. Table 4.4 provides information on the blocks in which the variables were entered into the regression analysis, the unstandardized regression coefficients ( $b$ ), the standard error for the unstandardized regression coefficient ( $SE\ b$ ), standardized regression coefficients ( $\beta$ ), and the variance ( $R^2$ ) explained for each model (block).

Table 4.4

*Hierarchical Regression Coefficients for Retention (n = 117),*

Variables	$B$	$SE\ \beta$	$B$
Demographic Characteristics (block 1)			
Constant	.618	.130	
Gender	.087	.100	.089
Race	-.004	.142	-.003
Demographic Characteristics and Financial (block 2)			
Constant	.339	.125	
Gender	.020	.089	.020
Race	-.062	.125	-.045
Financial Debt	.000	.000	.489*
Demographic Characteristics, Financial, and Quality Level of Relationships (block 3 – full model)			
Constant	.537	.246	

Table 4.4 (continued)  
*Hierarchical Regression Coefficients for Retention (n = 117),*

Variables	<i>B</i>	<i>SE β</i>	<i>B</i>
Gender	.045	.092	.046
Race	-.065	.127	-.047
Financial Debt	.000	.000	.500*
Relationship with Peers	-.004	.044	-.009
Relationships with Faculty	-.038	.036	-.115
Relationships with Staff	-.002	.028	-.008

Note:  $R^2$  = .008 for block 1; .239 for block 2; .252 for block 3 – full model

Note: \*  $p < .001$

**Demographics (model 1).** The first analysis consisted of the demographic variables, gender and race, and are not easily changed or controlled. The results of the analysis indicated that this block of variables was not a significant predictor of retention  $F(2, 103) = .405, p = .668$ .

**Financial (model 2).** The variable of financial debt was added to the sequential regression in block 2. Within block 2,  $F(3, 102) = 10.651, p = .001$ , financial debt ( $\beta = .489, p < .001$ ) was a significant predictor of retention, accounting for less than 24% ( $R^2 = .239$ ) of the variance in retention.

**Relationships (model 3).** The variables of relationships with peers, faculty, and staff were added in block 3, creating the full model. In the full model,  $F(6, 99) = 5.569, p = .001$ , financial debt ( $\beta = .500, p < .001$ ) was a significant predictor of retention, accounting for less than 26% ( $R^2 = .252$ ) of the variance in retention.

## Graduation

Sequential hierarchical regression analysis was conducted on the dependent variable of college graduation for seniors who completed the 2012 NSSE to address research question four. For Table 4.5 provides information on the blocks in which the variables were entered into the regression analysis, the unstandardized regression coefficients (*b*), the standard error for the unstandardized regression coefficient (*SE b*), standardized regression coefficients ( $\beta$ ), and the variance ( $R^2$ ) explained for each model (block).

Table 4.5

*Hierarchical Regression Coefficients for Graduation (n = 279)*

Variables	<i>B</i>	<i>SE β</i>	<i>B</i>
Demographic Characteristics (block 1)			
Constant	.874	.051	
Gender	.052	.036	.094
Race	.021	.049	.028
Demographic Characteristics and Financial (block 2)			
Constant	.860	.058	
Gender	.051	.036	.092
Race	.020	.049	.027
Financial Debt	.000	.000	.033
Demographic Characteristics, Financial, and Quality Level of Relationships (block 3 – full model)			
Constant	.836	.103	
Gender	.044	.037	.078
Race	.027	.049	.036
Financial Debt	.000	.000	.030
Relationships with Peers	-.016	.017	-.076
Relationships with Faculty	.011	.014	.069
Relationships with Staff	.011	.010	.094

Note:  $R^2$  - .010 for block 1; .011 for block 2; .022 for block 3 – full model

Note: \*  $p < .001$

**Demographics (model 1).** The first analysis consisted of the demographic variables, gender and race, and are not easily changed or controlled. The results of the analysis indicated that this block of variables was not a significant predictor of graduation  $F(2, 276) = 1.247, p = .289$ .

**Financial (model 2).** The variable of financial debt was added to the sequential regression in block 2. With block 2 added to the model, results for the regression analysis indicated that there were no statistically significant predictors of graduation  $F(3, 275) = .924, p = .430$ .

**Relationships (model 3).** The variables of relationships with peers, faculty, and staff were added in block 3, creating the full model. Results for the regression analysis indicated that there were no statistically significant predictors of graduation  $F(6, 272) = .860, p = .524$ .

## **Answers to Research Questions**

A quantitative approach allows statistical analyses to respond to the research questions presented in the study (Crewell, 2009). The results from the data analyses presented in this chapter are used to answer each the following four research questions.

### **Research Question 1 – Demographic Characteristics**

*What are the demographic characteristics of students who participated in the 2012 NSSE at a small private institution located in the central United States?*

The sample consisted of 396 participants, 117 freshmen and 279 seniors. Approximately two-thirds, 258 (65.2%) were identified as females, and 138 (34.8%) of the sample were males. The majority of the participants identified as white (86.6%), and due to the low percentages, all others represented were identified as non-white, which comprised of 13.4% of the sample. According to the United States Census Bureau (2012), the minority representation in the state in which the institution is located was similar to the minority population in the sample, and that of the institution.

### **Research Question 2 – Views on Relationships**

*To what extent is there a difference between freshmen and senior, male and female, and white and non-white students' views of relationships with a) peers, b) faculty, and c) staff?*

There was one statistically significant difference between the views of freshmen and seniors toward relationships with the three groups. The relationship occurred between seniors ( $M = 5.87$ ,  $SD = 1.272$ ) and freshmen ( $M = 5.556$ ,  $SD = 1.163$ ) and their relationship strength with peers resulting in  $p = .013$ , which is below the standard 95% confidence interval where  $p < .05$  signifies a statistically significant difference.

There also existed one statistically significant difference between the views of female and male students toward relationships with the three groups. The relationship occurred between female ( $M = 4.19$ ,  $SD = 1.694$ ) and male ( $M = 3.768$ ,  $SD = 1.400$ ) students and their relationship strength with staff resulting in  $p = .008$ , which is below the standard 95% confidence interval where  $p < .05$  signifies a statistically significant difference.

### **Research Question 3 – Freshmen Predictor of Retention**

*To what extent do the demographic variables (race and gender), financial variable (financial debt), and relationship variables (relationships with peers, relationships with faculty, and relationships with staff) predict freshmen retention?*

Results from the multiple hierarchical regression analysis for the dependent variable retention revealed that financial debt predicted student retention. When block 2 was entered into the analysis, financial debt,  $F(3, 102) = 10.651$ ,  $p = .001$ , was a statistically significant predictor of student retention., accounting for less than 24% ( $R^2 = .239$ ) of the variance. Again in the full model, financial debt,  $F(6, 99) = 5.569$ ,  $p = .001$ , was a statistically significant predictor of student retention, accounting for less than 26% ( $R^2 = .252$ ) of the variance in retention.

### **Research Question 4 – Senior Predictor of Graduation**

*To what extent do the demographic variables (race and gender), financial variable (financial debt), and relationship variables (relationships with peers, relationships with faculty, and relationships with staff) predict graduation with a degree from senior undergraduate students?*

Results from the multiple hierarchical regression analysis for the dependent variable graduation revealed that none of the three blocks of variables predicted student graduation that would be considered statistically significant.

### **Summary**

This chapter presented results from the data analyses. Data were analyzed and confirmed that the assumptions of data normality were satisfied. Frequencies and descriptive data were reported for background characteristics of the participants in the study. Independent samples *t*-test results revealed statistically significant differences between freshmen and senior perceptions on the level of quality relationships developed with peers. Also, there existed statistically significant differences between females and males in the quality relationships developed with staff. Hierarchical regression analysis showed that financial debt was statistically significant predictor for retention. Although values varied, the researcher also conducted hierarchical logistic regression analyses in response to question three and four and confirmed the findings of statistical significance remained consistent to that of the hierarchical multiple regression analyses. This supports Thayer (1986) who concluded it is unlikely that the two methods would produce markedly different results. A discussion of the results and recommendations for practice and future research are presented in chapter 5.



## **CHAPTER 5**

### **DISCUSSION, CONCLUSION, AND IMPLICATIONS**

This chapter provides discussion of the results presented in Chapter 4, informed by the culmination of the theoretical framework of the study and related literature. The chapter begins with a summary of the study, then discussion of the results as they pertain to social connectedness, implications for policy and programming, recommendations for future studies, with a conclusion and final thoughts wrapping up the investigation.

#### **Summary of the Study**

Chapter 1 provided an overview of the problem that institutions of higher education face when addressing retention and graduation rates. While the purpose of the study and research questions brought understanding to this study, the conceptual framework emphasizing social connectedness provided guidance in organizing and articulating the phenomena that the study sought to understand. The chapter concluded with the significance of the study and definitions of key terms and acronyms.

With Tinto (1975) theorizing that students who socially integrate into the campus community are more likely to retain and graduate, Chapter 2 presented current literature related to the quality relationships a college student can develop with peers, faculty, and staff, by focusing on the benefits, programs and issues that exist within each group. The demographic characteristics of gender and race were presented in relation to the differences that exist among different groups within higher education. Previous research on student debt was also presented, as it remains the leading factor as to why students leave an institution prior to graduating (Bowen et al., 2009). Moreover, with retention and graduation serving as dependent variables, existing studies on these factors were examined.

Chapter 3 was a review of the methodology of the study, including the research design and methodological approach informing the investigation, with review of the sample and participants. The survey instrument and data collection process were detailed, along with each independent and dependent variable involved in the study. The types of analyses used in this study were mentioned, in addition to the limitations and delimitations.

Included in chapter 4 were the results from the analyses, with the review of methods for screening the data and establishing assumptions of normality. Frequency and descriptive statistics were provided, as well as the results of significant correlations that existed between independent and dependent variables. The outcomes from the independent samples *t*-tests and the hierarchical multiple regression analyses were also expressed in a way that contributed to answering the four research questions addressed at the end of the chapter.

The following sections of this chapter attempt to bring greater understanding to the results as they relate to the independent and dependent variables. The implications on programming efforts and institutional practices are provided in regards to developing quality relationships, and the chapter concludes with final thoughts on this investigation.

### **Discussion of the Results**

Over the years, statistics remain consistent that approximately half of the students entering a four-year institution fail to graduate within five years (Noble & Sawyer, 2013). Institutions continue to actively explore initiatives to improve retention and graduation rates (Bettinger & Baker, 2014). As expectations and tuition costs rise, institutions assume increased responsibility to provide a campus environment wherein opportunities lead to greater academic success and student development. Although finances have been reported as among the leading

reasons students do not retain (Bowen et al., 2009), the focus must be directed toward factors where greater control is maintained by the institution.

Research indicates student engagement activities instituted by universities have a direct link to academic success (Astin, 1993; Kuh, 2003; Pike et al., 1997; Pike et al., 2011), which these activities most often involves some level of social interaction. Further investigation by Pascarella and Terenzini (1991) found having supportive individuals who care for and contribute to one's success plays an integral role in student development and academic success. There are varying levels of supportive relationships that exist, and Kram (1985) considers mentoring to be the highest level of a helping and meaningful relationship. Mentoring and other forms of quality relationships allows individuals to work through challenges that one may encounter at any given moment.

The process of adjusting to college involves several factors, and one key variable is the presence of a mentor who comes alongside a student and in some way contributes to his or her success (Lamport, 1993). The purpose of this study was to determine the extent in which quality relationships with peers, faculty, and staff predict student retention and graduation at a small, private institution located in the central United States. The theory of social connectedness became the conceptual framework that provided guidance in organizing and articulating the phenomena that occurred in this study. The results showed financial debt of a student was the greatest predictor of retention, and the only variable to be statistically significant. No variables were statistically significant predictors of graduating. The following sections present a discussion of the findings within the context of each independent variable addressed in this study, categorized by each block in the hierarchical analyses.

## Variables

The predictor variables were categorized into three blocks based on the level of control an institution has on the variable. The first block comprised of variables that are established at birth and related to demographic characteristics. The second block contained the total amount of financial debt owed to the institution that each student has accumulated. The third block consisted of the quality level of relationships each student has formed with the following groups: peers, faculty, and staff.

**Demographic Characteristics and Relationships.** Although one is unable to control his or her demographic characteristics, there is value in understanding the differences and biases that exist among various groups. In the multiple hierarchical regression analysis, block 1 contained gender and race as the independent variables.

**Gender and Relationships.** In regards to gender, disadvantages continue to exist in some aspects of the college experience for female students (Allen & Madden, 2006; Hall & Sandler, 1982; Salter & Persaud, 2003). The females in this study reported higher mean scores than males when referring to the quality relationships with peers, faculty, and staff, supporting the notion by Chodorow (2004) that females are more relational. Women intuitively connect with others when given the opportunity. This study found the relationship between female and male students' relationship quality with staff was statistically significant. Due to frequency in contact, students building relationships with peers and faculty occur much more organically than with staff. The role of many staff positions involve assisting students, which according to Chodorow, females are more likely than males to seek help when needed which allows females the opportunity to build relationships with staff.

***Race and Relationships.*** The college population continues to be increasingly diverse (Justiz, 1994), causing continuous examination of racial groups that may be at a disadvantage (Reason, 2009). For minority students whose cultures and communities do not resemble that of the college, Jacobi (1991) discovered a student is less likely to pursue a mentor who is of a different race or gender. Given the varying backgrounds and experiences, challenges for both parties exist as they see the world through a different lens. The findings from this study showed no indication that race had a noticeable impact on predicting retention or graduation, contradicting the findings of Braxton et al. (1988) which stated that white students were more likely than their counterparts to graduate from college with a degree.

***Students' Quality Relationships with Peers, Faculty, and Staff.*** Coffman and Gilligan (2002) found that students who withdrew from college prior to graduation were less likely to be able to identify someone on campus with whom a quality relationship had been developed. The process of navigating through college involves several factors, and one key variable is the presence of key figures who walk along students and help them effectively respond to the challenges that are present in college, and in life (Lamport, 1993). Participants at this particular institution reported high levels of relationships being developed, which could be attributed to the institution's emphasis placed on relationship building. Students are actively engaged in learning communities and freshmen seminar classes offered by the institution that creates space for relationships to develop. The high level of social connectedness for students increases the possibility for establishing key figures who contribute to their academic success. Block 3, the full block, of the multiple hierarchical regression analysis focused on three relationship groups (peers, faculty, and staff) to serve as additional independent variables.

***Students' Relationships with Peers.*** The findings in this study did not reveal quality relationships with peers as being statistically significant in predicting retention and graduation, but did find seniors were more likely than freshmen to have developed quality relationships with peers. While freshmen are adjusting to the transitional challenges of college, seniors are taking advantage of the additional time spent on campus to develop and nurture quality relationships with peers. A small private liberal arts institution where relationships are embedded into the culture could have contributed to students reporting high levels of quality relationships developed with peers, and ultimately impacting the results linked to retention and graduation. Although findings did not reveal quality relationships with peers as being a significant predictor of college retention or graduation, establishing close friends with classmates has benefits. Peer groups have proven to be the dominant change agent of student development during the college years (Astin, 1993; Dalton & Crosby, 2010; Pascarella & Terenzini, 1991). Norms are developed through these interpersonal interactions and constantly change under the direct approval or disapproval from trusted peers. These developed norms, along with other benefits that might contribute to student development indicate that interpersonal interactions have value in the higher educational experience.

***Students' Relationships with Faculty.*** Anaya and Cole (2001) reported high quality student-faculty relationships have a direct link to grade point average. With the focus on retention and graduation, the findings in this study did not support Tinto's (1993) conclusion that institutions reporting low rates of student-faculty interactions also had low rates of student retention. Like Tinto (1993), previous research also found students who retained had higher levels of contact with faculty (Bean, 1980; Endo & Harpel, 1982; Pascarella, 1980; Pascarella & Terenzini, 1979; Terenzini & Pascarella, 1977).

Although relationships with faculty did not predict student retention or graduation in this particular study, the descriptive mean score indicated that for the students in this dataset, they had quality relationships with faculty. According to Levine and Nidiffer (1996), the mental model of an instructor needs to include forming relationships with students as an integral role and identity of a faculty member. Overall, student-faculty interactions continue to decline (Cox & Orohovec, 2007) due partly to workloads and other job-related demands that have minimal impact on student success, such as research and publications. The decline in student-faculty relationships may not be the case at all institutions, like the small private liberal arts institution in this study where classes maintain low student-faculty ratios.

***Students' Relationships with Staff.*** Often, student-staff relationships play an integral part in constructing an institution's identity. The findings in this study found relationships with staff did not predict student retention or graduation. The likelihood for females in this study to develop quality relationships with staff was statistically significant compared to males. The role of many staff positions involve assisting students, which according to Chodorow (2004), females are more likely than males to seek help when needed which allows females to build relationships with staff.

Not only are quality relationships with staff beneficial for students needing a mentor but these relationships have the potential in contributing to student development (Braxton et al., 2004; Pak et al., 2006; Schreiner et al., 2011), which is a large part of the college experience. As online classes become increasingly popular (Allen & Seaman, 2011), limited time on campus creates challenges in advancing relationships to a quality level. When not in class, students are being forced to maximize working hours in order to afford college, which creates another barrier to developing much needed quality relationships on campus.

**Financial Issues within Higher Education.** With the combination of enrollment expansion and drastic cuts in state and federal appropriations, the financial burden has shifted from the taxpayer onto the student (Priest & St. John, 2006; Weerts & Ronca, 2006). College graduates in the class of 2014 accumulated on average \$33,000 of student loan debt (Izzo, 2014) and this debt remains the primary reason for leaving an institution prior to graduating (Bowen et al., 2009). According to the data in this study, the participants in this sample would graduate with an average student loan debt of \$36,317.88. Financial debt was added as an independent variable into block 2 of the hierarchical regression analysis.

**Financial debt.** Of the variables in this study, findings revealed financial debt was a statistically significant predictor of student retention. There was no indication that financial debt or any other variable was statistically significant in predicting graduation. Previous research from Cofer and Somers (2000) found increased student debt produces positive effects on college completion, which links to the findings in this study where students were more likely to retain with a larger amount of debt. This is consistent with the phenomenon where a greater tendency to continue an endeavor occurs following an investment of money, known as sunk cost effect (Arkes & Blumer, 1985; Okada, 2006). Reminding students of their financial investment into education may strengthen their commitment to complete college with a degree.

The findings in this study are also supported by Bradford and Farris (1991) who reported higher graduation rates at private institutions than those at public institutions. Students attending private institutions generally accumulate a greater amount of student loan debt compared to students attending public institutions (DeSantis, 2012). Other factors such as having smaller class sizes and increased opportunities to form quality relationships could attribute to private



institutions having higher graduation rates, but possessing a greater amount of debt could also play a role in increasing the commitment to stay enrolled at the university.

### **Implications for Policy and Practice**

This study is representative of a more systemic issue that nearly half the students entering college are not graduating with a degree. Identifying the major factors preventing students from retaining and graduating could be the first step to improving this systemic issue impacting institutions, and more importantly the students. Of the factors present in this study, financial debt was found to be the greatest predictor of student retention. Though efforts on forming quality relationships have value in higher education, energy and time should center on addressing financial initiatives with students in a way to have a greater impact on student retention and graduation.

National dialogue began when seminal researcher, Vincent Tinto (1975), theorized that students who socially integrate into the campus community are more likely to retain and graduate. This sparked a large number of studies that focus on Tinto's theory addressing retention, and continues to be one of the most widely studied topics within higher education (Berger & Lyons, 2005). This study adds to the body of research attempting to examine the specific groups of individuals with whom it is conducive for students to form quality relationships.

### **Recommendations for Institutions**

As tuition continues to rise and recent cuts in federal and state funding, the financing of college is shifting less from the taxpayers and more to the student (Priest & St. John, 2006). Innovation may be necessary to prevent the cost of tuition from becoming a financial burden on

students and interfering with their academic success. Dialogue addressing student debt needs to occur among decision makers within higher education until a proven solution has been found.

The need for tuition dollars is important for the sustainability of many institutions and it is not likely politicians will agree to tax the public at a higher rate to fund the education of all students. With only 52.8% of students graduating who enter a four-year institution (Noble & Sawyer, 2013), there is potential money being lost any time somebody leaves an institution. Institutions should consider charging tuition as a complete package rather than a per semester basis. This could create a sunk cost effect where students are reluctant to leave prior to graduation because of the considerable amount invested by paying the full amount upfront. Even when choosing to transfer, students face taking additional courses and paying more tuition due to limited credits being transferrable. The hope is students would take more ownership in their education. Obtaining this commitment from the student and paying upfront, tuition prices could drastically drop because institutions will be receiving money from 100% of the students instead of the current average of 52.8% of the population (Noble & Sawyer, 2013). Institutions could develop their own set of criteria to align with federal reporting guidelines and hold students accountable, such as students being allowed to take as many classes within a six-year window and additional charges would only apply when retaking a course or taking courses beyond the allotted time.

When addressing the financial investment of a college degree, another option to consider is pricing a degree based on the return on investment, an average salary that a particular degree will yield. This concept is similar to the varied pricing in tuition that currently exists among colleges. Higher tuition is common at more prestigious institutions, like Ivy League schools, where the diploma has greater value because the graduate becomes more sought after by

employers (Tucker, 2015). Equivalently, not all degrees hold the same value and opens the door to high-paying jobs. For instance, a graduate with an engineering degree is more likely to obtain a higher paying job than a graduate who has a degree in social work, yet under the current system the debt amount would remain the same for a student choosing either path. After accumulating large amounts of debt, graduates with low-paying jobs are challenged to live comfortably while paying off school loans, also stalling graduate education consideration (Brown & Caldwell, 2013). Not only will students have an option to choose a major of interest, but also determine which degrees are manageable in terms of cost.

With increasing enrollments of first generation and high-risk students (Engle & Tinto, 2008), many individuals are entering college without an adult figure who has demonstrated a commitment to, or a background in, lifelong learning (Schreiner et al., 2011). Creating positions on campus that serve as debt counselors could accomplish the adult mentor figure many students need. Although forming quality relationships in this study showed no statistical significance in predicting student retention or graduation, student development growth does occur (Dalton & Crosby, 2010; Engstrom, 2008; Komarrju et al., 2010; Pascarella & Terenzini, 1991). With financial debt being a significant predictor of retention, the main objective of a debt counselor would not only be helping students manage their debt but applying the sunk cost effect and reminding students of their financial investment into his or her education, strengthening their commitment to complete college with a degree. The debt counselor could mentor as a secondary role and assist in connecting students to peers, faculty, and staff with similar interests. Helping students navigate through financial challenges, and any other challenges they might encounter, could minimize factors such as emotional issues that interfere with academic success and student development.

Ongoing conversations should take place to facilitate a balance between students being allowed to establish their independence and providing necessary support and guidance to protect them from obstacles that may interfere with their success. If budgets are not able to support debt counselor positions, heavy workloads and added responsibilities of faculty and staff need to be re-examined if a cultural shift is to occur in which quality relationships with students are to become a priority. Faculty in particular, must also recognize the relational dynamics of having formal authority over the student if expected to assume a debt counselor position. These recommendations are an attempt to generate healthy dialogue among institutional leaders where innovation occurs and new ideas are created.

### **Recommendations for Students**

Individuals in the class of 2014 graduated with an average student loan debt of \$33,000, nearly double the amount students had to pay 20 years ago, even when factoring in inflation adjustments (Izzo, 2014). As tuition costs continue to rise without increasing funds in need-based grants and state appropriations, students must make a mindful decision that greatly impacts their future. Prior to entering college, an individual should accept the entire package of obtaining a degree while accumulating a large amount of debt, with the understanding that the completed experience is an investment that creates opportunities for future success. The worst case scenario for an individual is to accumulate a large amount of debt by attending college only to depart before ever obtaining a degree and expanding his or her opportunities. Once a decision to attend college is made, the commitment to obtain a degree needs to follow. For many students this means limiting working hours and assuming a larger amount of debt in order to free up time for academics. When selecting an institution to attend, the amount of debt one will accumulate upon

receiving a degree should be known so the student understands the financial investment toward his or her education, strengthening the commitment to retain.

Although not statistically significant in predicting retention or graduation, students forming relationships with peers, faculty, and staff appears to be a large part of the college experience. Knowing the benefits in regards to student development (Dalton & Crosby, 2010; Engstrom, 2008; Komarrju et al., 2010; Pascarella & Terezini, 1991), students should consider taking ownership in initiating interactions to become socially connected and experience first-hand the impact relationships play in college.

### **Recommendation for Future Research**

This study contributes to the current literature focused on social interactions linked to academic success in higher education. There appears to be little value for students to develop relationships with peers, faculty, and staff in terms of retention and graduation, but measuring the significance should be explored further. Confined to one institution, similar studies including the same variables should be conducted at other institutions with the same Carnegie classification, as well as institutions from different classifications, so results can be compared. Collecting the perceptions of students, staff, and faculty on relationships and academic success through qualitative studies could provide valuable data that was not present in this study.

Future research should consider including students' relationships with parents as a potential predictor of student retention and graduation. College students with highly involved parents reported greater personal competence and increased personal and social development (Shoup, Gonyea, & Kuh, 2009). Currently, parents are remaining actively involved throughout their child's college years, and in turn, students are accustomed to relying on family support when faced with academic, emotional, financial, or social challenges.

Additional predictors should be measured in future research to determine the greatest predictor of student retention and graduation. Once the greatest predictor is determined, institutional time and resources can be invested to design initiatives that strategically improve retention and graduation rates. In the meantime, research examining effective initiatives addressing financial debt could serve great purpose for institutions and students in higher education.

### **Conclusion**

This study explored the predictors of student retention and graduation to determine the influences student relationships with—peers, faculty, and staff—have on academic success in an attempt to better inform institutions when allocating resources and designing programs. As colleges continue to broaden their intent and admission policies to include a greater number of people, including those from a more diverse and heretofore underserved and potentially at-risk population, developing quality relationships with adult figures becomes increasingly important. The theory of social connectedness that helped guide this study, and related literature acknowledging that relationships exist in most student engagement activities provide context and support for this assertion. With emphasis placed on student engagement activities, researchers have been able to identify positive outcomes pertaining to student development (Astin, 1993; Chickering, 1969; Dalton & Crosby, 2010; Engstrom, 2008; Komarrju et al., 2010; Kuh, 2003; Pascarella & Terenzini, 1991; Spady, 1970). Many institutions recognize this value and have begun designing formalized programs and institutional practices that include a quality relationship component without knowing the types of relationships that will best serve their students. Though relationships with peers are important, developing relationships with staff or

faculty where financial issues can be addressed may have greater impact on a student's ability to retain, and ultimately graduate.

There are countless opportunities on college campuses for students to develop quality, meaningful relationships. New student days, first-year seminar classes, and living learning communities are just a few of the widely accepted programs taking place on campuses to assist with the transition to college and where quality relationships are developed. Regardless of the program, the willingness and investment by both parties determines the success of the relationship, but the one who takes the initiative is creating a healthy campus culture that fosters student development with the possibility of impacting academic success.

### **Final Thoughts**

With retention and graduation rates being strong indicators of a student's progress and an institution's commitment to academic success (Berger & Lyons, 2005), institutions continue to actively explore initiatives to improve retention and graduation rates (Bettinger & Baker, 2014). Furthermore, institutions must also understand that retention and graduation are critical components to the academic and financial success of a university (Archer & Cooper, 1999; Tinto, 2009). To guide resource allocations and programming efforts, the pursuit of finding the greatest predictor of student retention and graduation should be at the forefront of higher education research.

Efforts should continuously examine relationships with peers, faculty, and staff, and any other area that might have an impact on retention and graduation. The researcher hopes the findings from this study will contribute to the body of knowledge needed to influence decisions that will lead to academic success for more college students.

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